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TEMPORARY NATIONAL ECONOMIC COMMITTEE

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MONOGRAPH No. 41

PRICE DISCRIMINATION IN STEEL

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MONOGRAPH NO. 41

PRICE DISCRIMINATION IN STEEL

JOHN M. BLAIR
and
ARTHUR REESIDE

ACKNOWLEDGMENT

This monograph was written by

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The Temporary National Economic Committee is greatly indebted to these authors for this contribution to the literature of the subject under review.

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(Signed) JOSEPH C. O'MAHONEY,
Chairman, Temporary National Economic Committee.

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Hon. JOSEPH C. O'MAHONEY,
Chairman, Temporary National Economic Committee,
Washington, D. C.

MY DEAR SENATOR: Steel is the basic durable good of our economy. It enters into so much of production as to characterize this period as "the Age of Steel." Not only is private industry influenced directly by steel prices but the Government's efforts to develop the materials of defense depend directly upon the purchase and use of enormous quantities of steel. For these reasons this brief study of price discrimination in steel has great value and unusual timeliness.

The Temporary National Economic Committee has conducted prolonged hearings on the concentration of control in steel production. In these hearings the steel industry testified at length and summarized its testimony in a three volume work which has had wide circulation. It is not the purpose of this monograph to attempt a duplication of either the findings of the hearings or the report of the steel corporations. Instead, it goes directly to the crucial problem of prices, seeking an answer to the question of the existence of discriminations which favor large users of steel in comparison with smaller users, thus providing a margin which effectively limits competition and increases monopoly.

The data used in this monograph were collected by Government agencies under authority of the Temporary National Economic Committee. The authors have treated them by approved methods of statistics. They have interpreted the figures carefully and confined their analyses and comments strictly to what these figures signify. In doing so they have opened avenues of thought and suggested areas of needed research which should stimulate other students to explore further. But the limits of time and material facilities have prevented a more extended treatment of the problems raised in this study.

John Blair has brought to this study a diligence and apperception characterizing the work of a competent researcher in a difficult field. He has organized the material and written the report. Arthur Reeside is responsible for collecting much of the original data, for continuing an interest in the study through all its trying vicissitudes, and for developing the statistical methods used in presenting the data. Dr. Dewey Anderson, executive secretary of the Temporary National Economic Committee, is to be commended for his supervision of the study.

This monograph is offered the committee for use in its deliberations in the hope that it throws some light on a very much involved problem of our modern economy.

Respectfully submitted.

THEODORE J. KREPS,
Economic Adviser.

OCTOBER 18, 1940.

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PREFACE

This is a study designed to explore statistically a relatively unknown field; that is, the actual extent to which prices on particular items vary according to the size of the shipment.

The data on which this study rests were not gathered originally for the purpose to which they have here been put. Consequently, certain assumptions had to be made; certain irregularities were found to exist in the graphic curves; and therefore no claim is made to statistical perfection.

Nevertheless, the assumptions appear reasonable, the irregularities minor, and the general relationship clear between price concessions, size of shipment, and concentration of buying power.

The economic implications of the relationships are by no means fully explored. This report does not go beyond presenting the data and pointing out certain types of significance which they may have. With the available resources and time at the disposal of the authors severely limited, the study could be carried no further. It is hoped, however, that the results presented will stimulate the undertaking of more complete analyses into such suggested subjects as (*a*) the precise relationship between price concessions to large buyers, the resultant competitive disadvantage of small buyers, and the growth of economic concentration; (*b*) the standards by which price concessions are or should be determined; and (*c*) the effect of these concessions upon existent analyses of the basing point system.

There are many to whom the authors are grateful for counsel and assistance, but particular acknowledgment is made to Ward S. Bowman, upon whose knowledge of the steel industry the authors have relied so heavily.

JOHN M. BLAIR.
ARTHUR REESIDE.

PART I

THE DATA AND THE ANALYTICAL TECHNIQUES

SOURCE, NATURE, AND LIMITATIONS OF THE DATA

A broad survey of the steel industry was undertaken by the Department of Justice for the Temporary National Economic Committee during 1938 and 1939. The data obtained by the Department of Justice were voluminous, extensive, and comprehensive. The relationship of those data to the study presented herewith is, first, that they serve as a background and, second, that the statistical materials in this study are derived from the Justice Department's questionnaire known as Form B. (For Form B questionnaire, see appendix.)

The Form B questionnaire was designed to produce data which were for the most part geographical in nature. Its coverage for the period studied ranged, by products, from 50 to 90 percent of all shipments of the industry. Because members of the industry found it a considerable burden to supply information of this kind, the coverage was limited to the single month of February 1939.

The danger of generalizing from a single month is appreciated. Other periods were originally to have been included by the Department of Justice, but because of the time and the expense involved for reporting companies, such additional data were not obtained. However, the month chosen was not one of extremely depressed conditions nor one which was characterized by the trade magazines as a period of price weakness. On the other hand, business was not booming from the point of view of the steel companies. The worst of the 1938 upset was over, and the real upswing in 1939 had not as yet taken place. The rate of utilization (ingots produced to capacity for production) for the industry was nearly 55 percent (54.7 percent) during the month. No changes in published prices took place during the month studied.

The period covered was so short and the break-down of the data so extensive that the figures were spread to a point where the items reported by districts may be practically used as individual shipments. The break-down was by plants, by products, by basing points, and by consuming districts.

The questionnaire did not ask specifically for a list of individual shipments. The data requested were totals for consuming districts, of which there were 64. Data for each of these 64 consuming districts were in effect reported separately for each basing point upon which the shipments were priced. (More than 20 basing points were reported but of course not 20 for each consuming district or on each product.) The data were further segregated into 10 product groupings. The plant from which the shipment was made was also one of the controls utilized. (The United States Steel Corporation and other corporate groups reported separately for each operating plant sampled.)

In addition to the extensiveness of the break-down, the narrowness of time, and the specific definition of the products, there is yet another

factor which tended to spread the items; that is, the geographical dispersion inherent in the basing point system. Steel mills sell to the Nation rather than to their own particular locality. It is then at least reasonable to believe that the totals reported were so composed that the data reflect single shipments with sufficient accuracy for the purpose of this study.

This basic assumption requires explanation in order that the limitations of the data may be understood. Despite the break-downs, the data represent to a limited extent combinations of shipments rather than individual shipments. At all events, however, accumulation could only make the inclination of the curves less abrupt and would thus result in an understatement rather than an overstatement of the extent of price concessions.

A further assumption to this study is that large buyers buy in large quantities; that large shipments are usually destined for large buyers, while small shipments generally go to small buyers. Obviously, considering the price concessions to be gained from sizeable purchases, any large buyer who purchased in small quantities would be needlessly increasing his costs and acting against his own economic interests.

STATISTICAL AND GRAPHIC TECHNIQUES

The statistical methods used are simple and conventional. Each product was sorted as to the tonnage of its items. The items were grouped into tonnage classes and tabulated to give the aggregate of tonnage and aggregate of dollar figures for each class. The dollar figures were then divided through by the tonnage figures to obtain the averages or dollar-per-ton figures.

Published prices were uniform for most basing points during February 1939. Shipments based on points where prices were uniform have been designated as "Normal base point shipments." Shipments based on Worcester, Granite City, Gulf or Pacific ports, and Detroit have been designated as "abnormal." Shipments of cold rolled strip on the Chicago basing point were also abnormal in this respect. The reason for this distinction is perhaps best explained in that shipments based on Granite City were quoted during February 1939 at $2 above those at most other points. Shipments based on Pacific ports were $10 higher. Detroit was classified as abnormal because, strictly speaking, it was not a basing point. Detroit shipments generally carried no freight charges against the customers, freight being included in the base delivered price. (Table 5 of the appendix lists and classifies published prices for the period studied.)

An analysis was made of all reported items and a separate analysis was made of normal base point shipments. The chief difference between the two is that the former contains 2,929 items and the latter 2,555; that is, 374 items were eliminated. For purposes of statistical convenience, the text, tables, and charts refer only to normal base point shipments. The tables which include all reported items are presented in the appendix to indicate that the fairness of the original sample has in no way been significantly impaired by this selection.

A number of considerations influenced the choice of class intervals. It will be noticed that they follow the conventional pattern of such statistical break-downs as classes of income distribution or business by size in that they are narrow on the small end of the distribution

and wide on the large end. They are approximately, though not exactly, logarithmic. The class marks 1, 10, 100, 1,000, and 10,000 represent an exact logarithmic series. In order to give a more comprehensive view of the distributions, this series was split at 3, which is the approximate geometric mean (exact figure 3.162+).

The resulting classes meet the following requirements:

(1) The names of the classes are round numbers.
(2) They are sufficient in number to give an adequate view of the distributions.
(3) They maintain a fairly even frequency for each class.

The purpose of keeping the frequencies even is not only to increase the reliability of the results but also to make possible the presentation of a pattern which tends to distribute the reader's attention in proportion to the frequency. The small end of the distribution is magnified because of the relatively high frequency therein.

Most of the companies reported their tonnage figures accurate only to 1 ton. For this reason all reports were rounded to even tons. In the process of rounding, items of less than one-half ton were ignored, and thus a few items were discarded. The matter is of no practical consequence here. It is merely noted along with the fact that the tonnage scales contain no zero.

The vertical scales labeled "Dollars per ton" do not always contain a zero. The need of a zero in this case is supplied by the scale of percent decline. The left, or "Dollars per ton" scale, in each case is fitted to the right scale of "Percent decline."

The scales of percent decline are the same for all charts of the set. A decline of 20 percent (or 21 or 22 percent, etc.) is thus represented by the same vertical distance on all charts of the set. The percent decline is, of course, the decline from the maximum ordinate. No percentage figures are given in the tables; they are evident in the charts.

The percentage scales for the charts of net extras are labeled "Contributed percent decline" because the declines represented are a component of the mill net. Specifically what has been done is simply to use the same scales for mill net and net extras. The declines in net extras are thus not expressed as a percentage of the maximum ordinate for net extras but as a percentage of the maximum ordinate for mill net. A "Contributed percent decline" of 20 percent (or 21, or 22 percent, etc.) thus means that the decline of net extras accounts for 20 percent out of perhaps a total of 30 percent decline shown for mill net.

It is to be remembered that net extras are quality and quantity premiums less quality and quantity discounts. Premiums and discounts are components of a price. To be more specific, it is impossible to buy a ton of extras.

PART II

GRAPHIC PRESENTATION OF THE DATA

Before examining the charts presented in this section, it may be convenient to describe briefly the various components of the steel price structure. Consequently definitions of the elements of the steel pricing system are presented below.

Base Price.

In such commodities as steel, there are, even under one product classification, innumerable different sizes and specifications. To publish prices for each of these various possible combinations would be impracticable and confusing. Consequently a more or less standard specification with respect to gage, thickness, length, quantity ordered, chemical specification, and tolerance is quoted as "base." This price is also restricted to a particular location, which is usually, but not necessarily, one of the points of production of the product. This point is known as a basing point. Thus the base price is the price of a selected quantity and specification of a particular product at a particular point. In this study actual base prices were calculated by deducting from the invoiced delivered price the freight added from the governing base point to the point of delivery and the extras charged. (That basing point which makes for the lowest combination of base price plus freight at any particular delivery point is known as the governing basing point.)

Extras and Deductions.

These are the prices which are added to or deducted from the base price to arrive at the price of a particular specification of the product which does not fall in the classification described above as base. Net extras are thus quality and quantity premiums less quality and quantity deductions.

Delivered Price.

The delivered price is the price actually paid by a steel buyer at the point of delivery. (Theoretically, delivered prices may be calculated uniformly by all steel sellers because basing point prices are uniformly published, extras and deductions are uniform and published, and the freight rate which applies from the basing points to consuming points are published. Adding these various charges in such a manner as to utilize the basing point which is nearest pricewise to the consumer makes possible what amounts to uniform published delivered prices.)

Freight Absorption and Phantom Freight.

Freight absorption or phantom freight arises when shipments are made from a mill not located at the basing point upon which the shipment was priced. If the shipment is made from a mill from which the freight rate to the point of delivery is greater than the freight rate from the governing basing point, the difference in these freight rates is called freight absorption. When the freight from the point of delivery is less than the rate from the governing basing point, the difference is called phantom freight.

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Mill Net.

Mill net is the price received at the mill after the payment or allowance for the actual transportation from mill to destination has been deducted from the invoiced delivered price.

On the following charts variations by size of shipment in the mill net, net extras, and the base price are plotted for these steel products: Plates, heavy structural shapes, wire rods, plain drawn wire, hot rolled sheets, cold rolled sheets, hot rolled strip, and cold rolled strip. Data are also available and presented in the tables of the appendix, though not charted, for sheet and tin plate bars and for tin plate. Unfortunately, the data for the first of these items are not sufficiently complete for purposes of charting. And, since tin plate, unlike most other steel products, is usually sold on the basis of long-term contracts, it was omitted because the various shipments made within the term of the contract are only components of the contract and therefore do not indicate at all the size of the buyer.

Although data are available and are presented in the tables for delivered value, freight charged, net extras, base price, freight paid, freight absorbed, and mill net, they are plotted here only for mill net, net extras, and base price. These items are the most significant in the steel price structure, and variations in them cannot be ascribed to variations in freight, a factor determined by geographic location.

GRAPHIC PRESENTATION

VARIATION IN AVERAGE PRICE

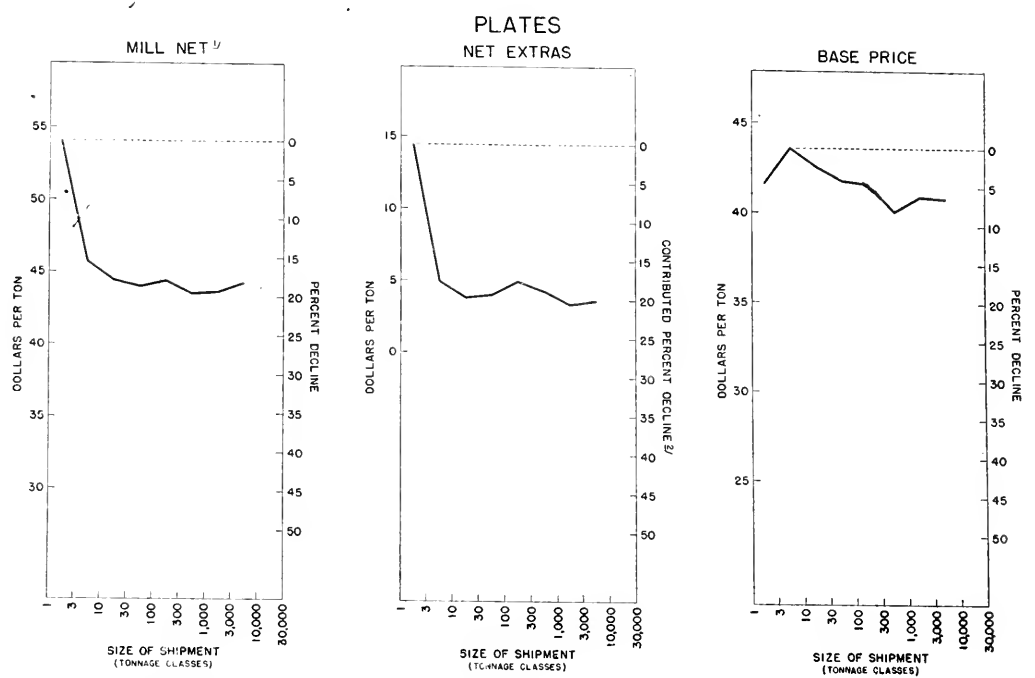
BY

SIZE OF SHIPMENT

CHART I

VARIATIONS IN AVERAGE PRICE PER TON BY SIZE OF SHIPMENT

UNITED STATES, FEBRUARY 1939



1/ INCLUDING EXTRAS

2/ ACTUAL DECLINE IN EXTRAS EXPRESSED AS A PERCENT OF MAXIMUM MILL NET TO SHOW AMOUNT OF DECLINE IN MILL NET ACCOUNTED FOR BY DECLINE IN EXTRAS

Plates.—Of the eight products studied in this report, steel plates ranked third in volume produced, production during 1939 totalling 3,101,981 tons. Large quantities of plates are distributed to such atomistic channels as (1) construction contractors, fabricators, etc.; (2) jobbers, dealers, and distributors; (3) exports; and (4) miscellaneous industries. Buying power is thus widely distributed among many relatively small purchasers. An exception is the U. S. Government, a large purchaser of plates, which, however, does not exert the buying pressure usually applied by large private purchasers. The slope of the mill net curve, as charted, reflects this diffusion of buying power; after an abrupt initial decline, the curve flattens out, so that the mill net on a 3,000-ton purchase is about the same as that on a 10-ton purchase. Similarly, the trend of the base price is relatively stable.

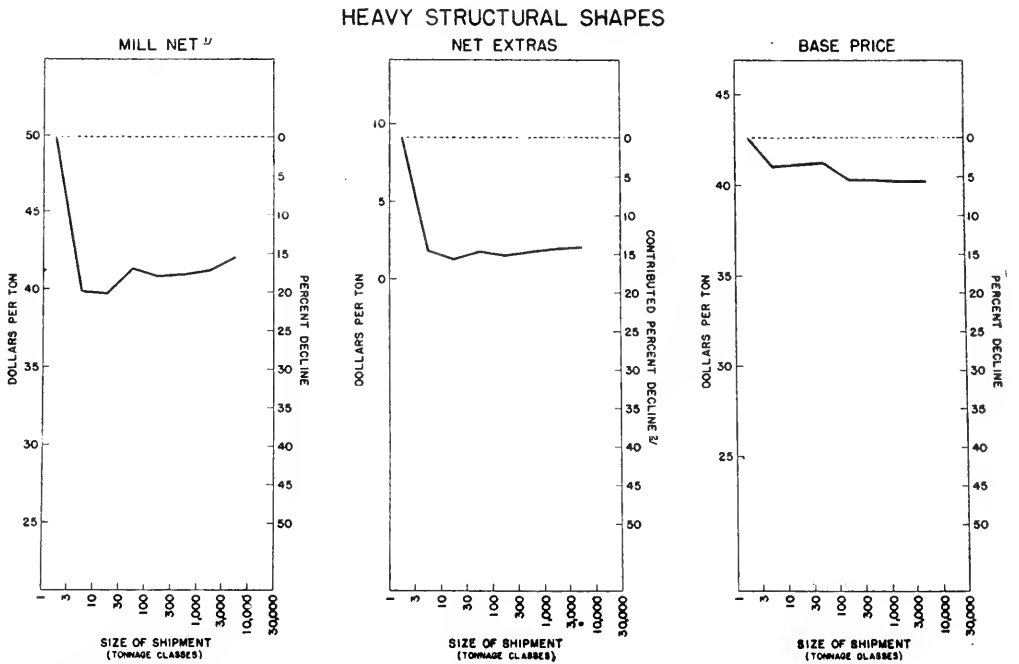
Average price per ton

Size of shipments (tonnage classes)	Mill net	Net extras	Base price
Under 3	$54.16	$14.41	$42.00
3 to 10	45.72	4.95	43.63
10 to 30	44.43	3.85	43.28
30 to 100	44.07	4.00	42.21
100 to 300	44.45	4.93	42.05
300 to 1,000	43.57	4.37	40.77
1,000 to 3,000	43.66	3.33	41.11
3,000 to 10,000	44.38	3.62	41.00
10,000 and over			
Total	43.93	4.08	41.30

CHART II

VARIATIONS IN AVERAGE PRICE PER TON BY SIZE OF SHIPMENT

UNITED STATES, FEBRUARY 1939



1/ INCLUDING EXTRAS

2/ ACTUAL DECLINE IN EXTRAS EXPRESSED AS A PERCENT OF MAXIMUM MILL NET TO SHOW AMOUNT OF DECLINE IN MILL NET ACCOUNTED FOR BY DECLINE IN EXTRAS

Heavy structural shapes.—Production of heavy structural shapes in 1939 totalled 2,677,967 tons, making shapes the third most important of the items studied. The chief consuming channels for shapes are (1) construction contractors, fabricators, etc. (which dominate their consumption) and (2) jobbers, dealers, and distributors. Shapes, like plates, are thus consumed by many relatively small buyers. Reflecting this scattering of buying power, the mill net curve, following an abrupt initial decline, flattens out in much the same manner as in the case of plates; indeed, the mill net on a very large shipment is somewhat higher than that on a moderately small purchase. Likewise, as in plates, the base price remains comparatively constant.

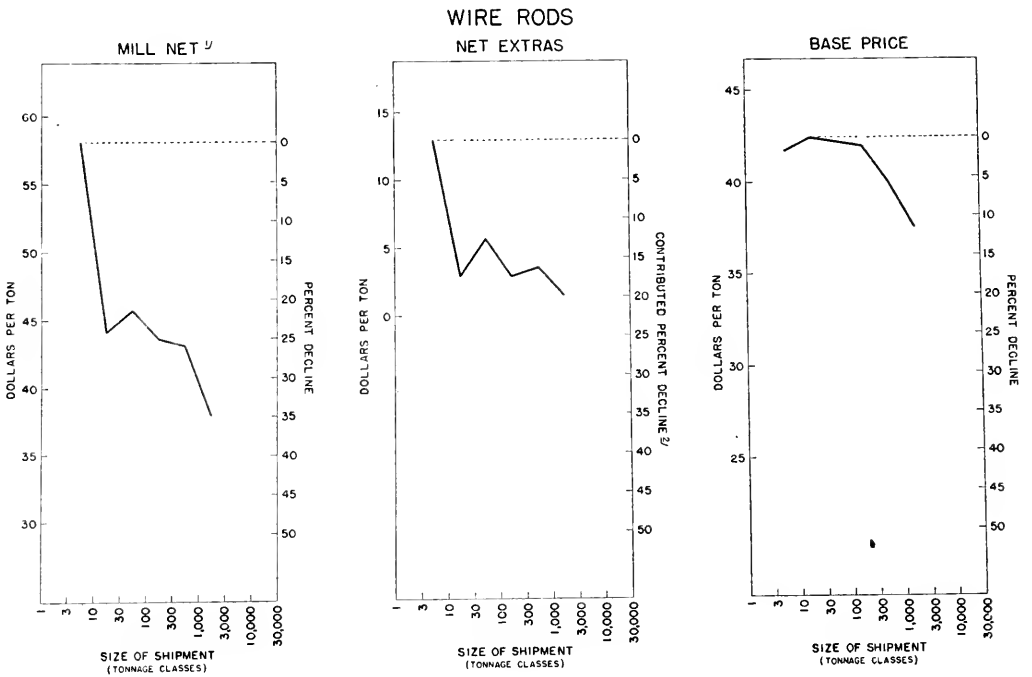
Average price per ton

Size of shipment (tonnage class)	Mill net	Net extras	Base price
Under 3	$49.89	$9.14	$42.61
3 to 10	39.87	1.81	41.04
10 to 30	39.77	1.25	41.11
30 to 100	41.36	1.78	41.19
100 to 300	40.85	1.50	40.29
300 to 1,000	40.90	1.78	40.27
1,000 to 3,000	41.24	1.95	40.18
3,000 to 10,000	42.08	2.07	40.22
10,000 and over			
Total	41.21	1.83	40.32

CHART III

VARIATIONS IN AVERAGE PRICE PER TON BY SIZE OF SHIPMENT

UNITED STATES, FEBRUARY 1939



1/ INCLUDING EXTRAS

2/ ACTUAL DECLINE IN EXTRAS EXPRESSED AS A PERCENT OF MAXIMUM MILL NET TO SHOW AMOUNT OF DECLINE IN MILL NET ACCOUNTED FOR BY DECLINE IN EXTRAS

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Wire rods.—Wire rods, with an output of 3,680,297 tons during 1939, ranked next to hot-rolled sheets in quantity produced. Rods, unlike the other products analyzed in this report, are, for the most part, sold not to other industries but to those steel producers who possess the special equipment required to fabricate the rods into wire products. Since the major portion of the Nation's wire-drawing capacity is in the hands of a few horizontally integrated steel producers, the market for wire rods is dominated by a small number of large buyers. That these buyers obtain substantial concessions is indicated by the extensive price declines in mill net, with large purchases yielding almost 35 percent less than small purchases. Similarly the base price registers a marked decrease in the upper tonnage classes.

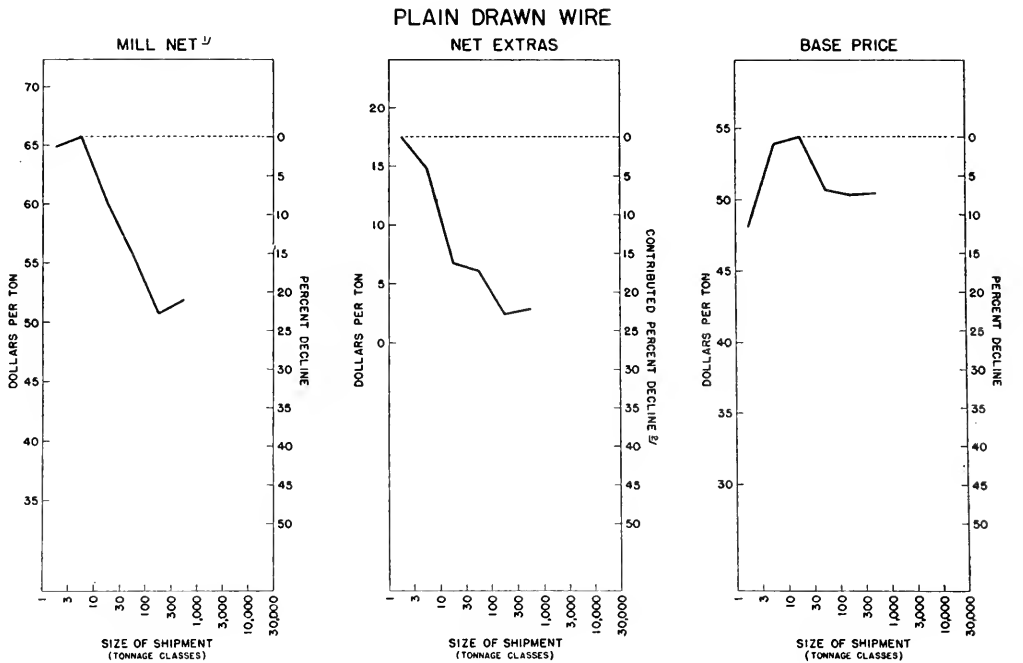
Average price per ton

Size of shipments (tonnage classes)	Mill net	Net extras	Base price
Under 3	$58.13	$13.00	$41.75
3 to 10	44.15	2.95	42.48
10 to 30	45.73	5.69	42.26
30 to 100	43.61	2.90	42.00
100 to 300	43.18	3.61	40.25
300 to 1,000	37.97	1.57	37.58
1,000 to 3,000			
3,000 to 10,000			
10,000 and over			
Total	41.09	2.74	39.37

CHART IV

VARIATIONS IN AVERAGE PRICE PER TON BY SIZE OF SHIPMENT

UNITED STATES, FEBRUARY 1939



1/ INCLUDING EXTRAS.

2/ ACTUAL DECLINE IN EXTRAS EXPRESSED AS A PERCENT OF MAXIMUM MILL NET TO SHOW AMOUNT OF DECLINE IN MILL NET ACCOUNTED FOR BY DECLINE IN EXTRAS.

Plain drawn wire.—With a production in 1939 of 2,924,293 tons, plain drawn wire ranked fifth of the items studied. The principal consuming channels for this type of steel are: (1) jobbers, dealers, and distributors, and (2) miscellaneous industries. These channels are, of course, composed of numerous relatively small buyers with buying power thus diffused. The over-all decline in mill net is found to be about the same as the decrease in plates and sheets—also subject to decentralized buying—and is noticeably less than the decline in wire rods. Also, the base price is relatively stable in the larger tonnage classes registering a total decrease only about half that of wire rods. In the smaller tonnage classes, however, the base price is quite irregular, registering not a decline but an increase. One possible explanation for this might be that on small shipments, published extras are so large that small wire producers may possess considerable leeway to grant concessions in the base price.

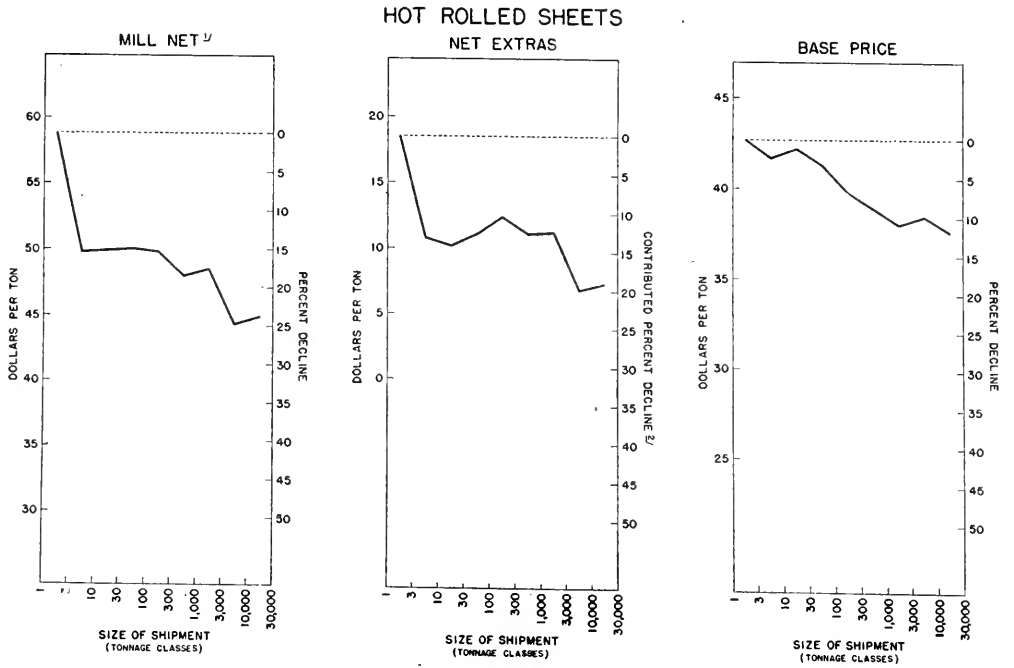
Average price per ton

Size of shipment (tonnage classes)	Mill net	Net extras	Base price
Under 3	$64.97	$17.56	$48.13
3 to 10	65.68	14.80	53.89
10 to 30	60.10	6.75	54.41
30 to 100	55.70	6.08	50.74
100 to 300	50.77	2.47	50.33
300 to 1,000	51.89	2.89	50.42
1,000 to 3,000			
3,000 to 10,000			
10,000 and over			
Total	53.19	3.90	50.79

CHART V

VARIATIONS IN AVERAGE PRICE PER TON BY SIZE OF SHIPMENT

UNITED STATES, FEBRUARY 1939



1/ INCLUDING EXTRAS

2/ ACTUAL DECLINE IN EXTRAS EXPRESSED AS A PERCENT OF MAXIMUM MILL NET TO SHOW AMOUNT OF DECLINE IN MILL NET ACCOUNTED FOR BY DECLINE IN EXTRAS.

Hot rolled sheets.—Hot rolled sheets are easily the most important of all steel products, production in 1939 reaching a twenty-year high of 9,978,637 tons. Use is made of hot rolled sheets where there is required only the durability of steel without the high-gloss finish obtainable only in the more expensive cold-rolled products. Consequently, their uses are innumerable, and large quantities are purchased both by industries in which buying power is centralized and by those in which it is widely diversified; among the former type of consumption channels are the automotive, container, and household equipment industries, and among the latter are jobbers, dealers and distributors, miscellaneous industries, and exports. Reflecting this combination of different types of buyers, the price declines in mill net and in base price are about midway between the declines of those items purchased by many relatively small buyers, e. g., plates and shapes, and those subject to extremely concentrated buying power, e. g., strip.

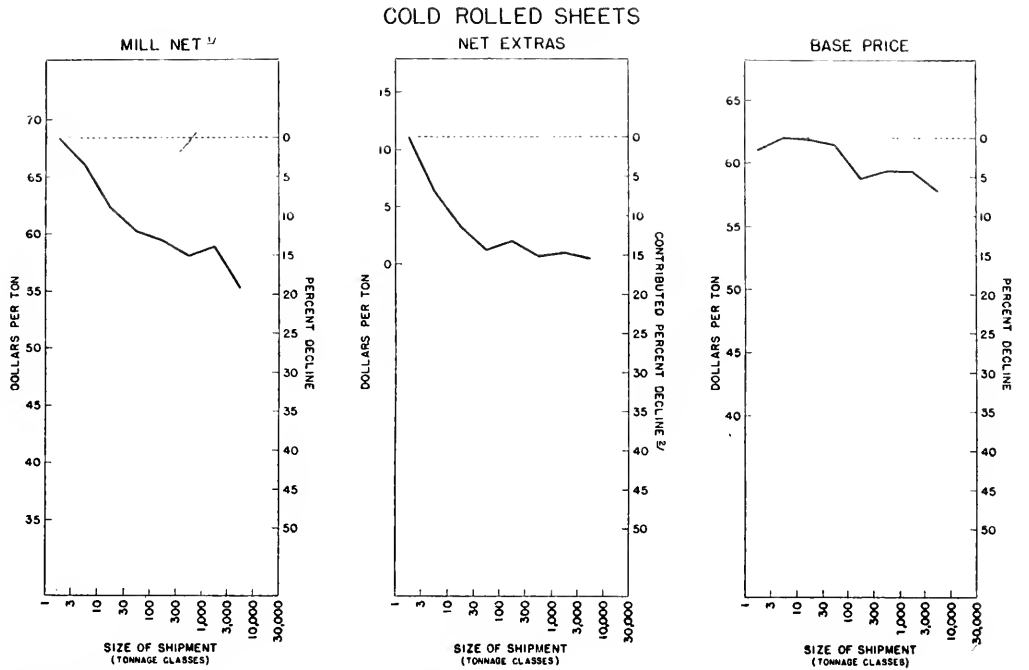
Average price per ton

Size of shipment (tonnage classes)	Mill net	Net extras	Base price
Under 3	$58.85	$18.54	$42.74
3 to 10	49.81	10.81	41.78
10 to 30	49.90	10.25	42.24
30 to 100	50.07	11.16	41.36
100 to 300	49.79	12.41	39.81
300 to 1,000	48.04	11.16	38.98
1,000 to 3,000	48.52	11.20	38.00
3,000 to 10,000	44.29	6.88	38.48
10,000 and over	44.91	7.33	37.67
Total	47.65	10.29	38.78

CHART VI

VARIATIONS IN AVERAGE PRICE PER TON BY SIZE OF SHIPMENT

UNITED STATES, FEBRUARY 1939



1/ INCLUDING EXTRAS

2/ ACTUAL DECLINE IN EXTRAS EXPRESSED AS A PERCENT OF MAXIMUM MILL NET TO SHOW AMOUNT OF DECLINE IN MILL NET ACCOUNTED FOR BY DECLINE IN EXTRAS.

Cold-rolled sheets.—Production of cold-rolled sheets in 1939 totalled 3,071,498 tons, making them the fourth most important of the items studied. Cold-rolled sheets are different from hot-rolled sheets only in their possession of a high-gloss finish. Formerly they required additional processing and were regarded as a more highly finished product. Recently, however, the use of the continuous process has made the additional processing unnecessary. That division of consuming channels between concentrated and diffused buyers which characterizes hot-rolled sheets, applies also to cold-rolled sheets. On one hand they are used in large quantities by the automobile and household equipment industries. But on the other hand they are used extensively by a vast number of manufacturers producing other types of consumers durable goods, particularly specialty items. Consequently, the pattern of price concessions, like that of hot-rolled sheets, is between the extremes of the items subject to highly concentrated buying and those affected by widely diversified purchasing.

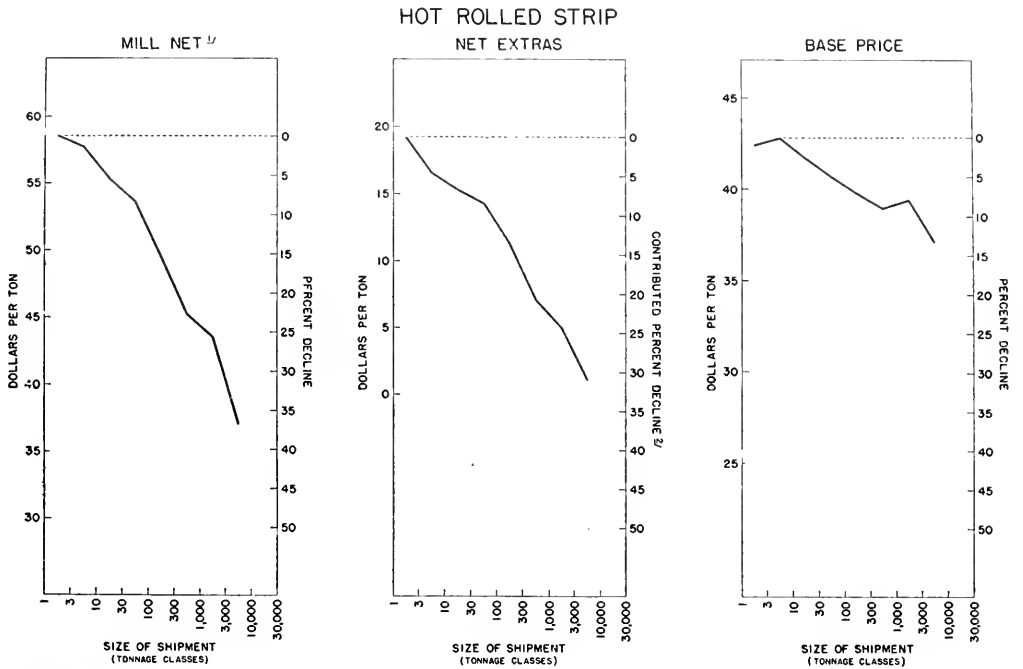
Average price per ton

Size of shipment (tonnage classes)	Mill net	Net extras	Base price
Under 3	$68.46	$11.13	$61.07
3 to 10	66.15	6.31	62.00
10 to 30	62.31	3.26	61.92
30 to 100	60.27	1.20	61.48
100 to 300	59.42	2.02	58.85
300 to 1,000	57.99	.66	59.45
1,000 to 3,000	58.81	.98	59.39
3,000 to 10,000	55.22	.49	57.83
10,000 and over			
Total	57.51	.87	58.97

CHART VII

VARIATIONS IN AVERAGE PRICE PER TON BY SIZE OF SHIPMENT

UNITED STATES, FEBRUARY 1939



1/ INCLUDING EXTRAS.

2/ ACTUAL DECLINE IN EXTRAS EXPRESSED AS A PERCENT OF MAXIMUM MILL NET TO SHOW AMOUNT OF DECLINE IN MILL NET ACCOUNTED FOR BY DECLINE IN EXTRAS.

271968—41—No. 41——5

Hot-rolled strip.—Hot-rolled strip ranked seventh of the items studied with a production of 1,826,696 tons. Strip is one of the light, flat-rolled products, the names of which vary according to size and dimension. Generally speaking, strip is a narrow sheet, under twelve inches in width and under one-quarter inch in thickness. The consumption of this product is dominated by the automobile industry which takes about as much strip as all the other channels put together. Thus the declines in the prices charted are extensive. A decrease of over 35 percent in mill net is due in large part to a drop in extras from approximately $19 to $1. At the same time, the decline in the base price is substantial, exceeding 12 percent.

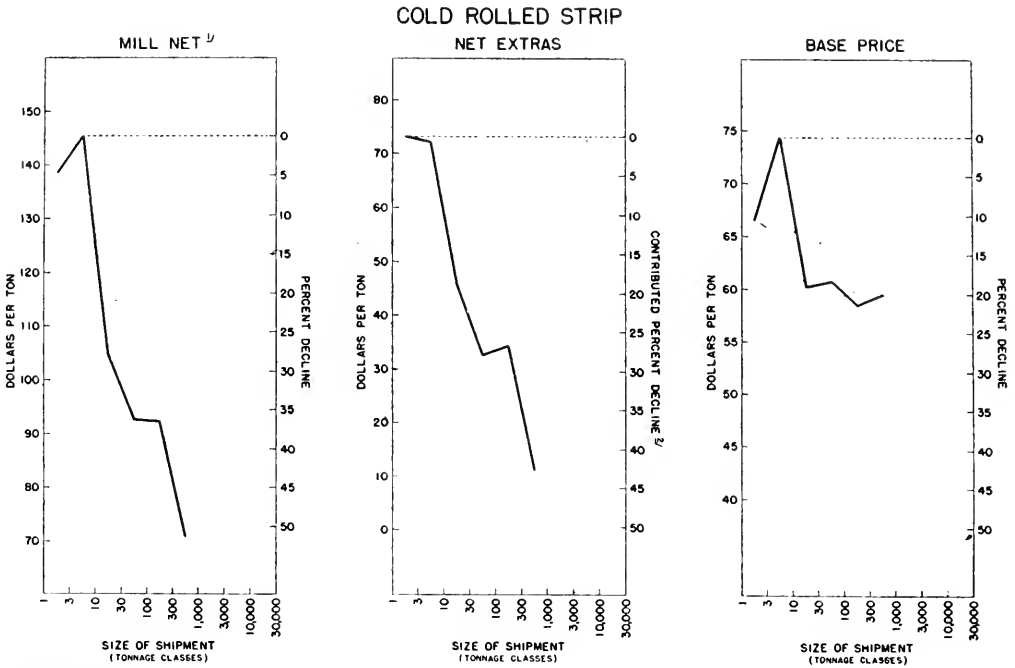
Average price per ton

Size of shipment (tonnage classes)	Mill net	Net extras	Base price
Under 3	$58.56	$19.25	$42.42
3 to 10	57.73	16.54	42.85
10 to 30	55.31	15.33	41.70
30 to 100	53.61	14.30	40.68
100 to 300	49.39	11.29	39.79
300 to 1,000	45.27	7.14	38.97
1,000 to 3,000	43.57	5.00	39.41
3,000 to 10,000	37.04	1.04	37.12
10,000 and over			
Total	45.16	6.92	39.23

CHART VIII

VARIATIONS IN AVERAGE PRICE PER TON BY SIZE OF SHIPMENT

UNITED STATES, FEBRUARY 1939



1/ INCLUDING EXTRAS

2/ ACTUAL DECLINE IN EXTRAS EXPRESSED AS A PERCENT OF MAXIMUM MILL NET TO SHOW AMOUNT OF DECLINE IN MILL NET ACCOUNTED FOR BY DECLINE IN EXTRAS

Cold-rolled strip.—Although from the point of view of quantity produced, cold-rolled strip, with a 1939 output of 766,339 tons, ranks last of the eight items studied, its high price places it, in terms of value, among the more important steel products. Probably more than any of the other items, its consumption is dominated by a small number of very large buyers—principally the automobile producers. The price concessions to the big buyers can be seen to be very substantial. The mill net on large orders is less than half of that on small purchases. Net extras decline from over $70 per ton to nearly $10, despite the fact that quality demands on large orders are frequently very exacting. And the base price—immune from quantity or quality factors—is approximately 20 percent less to large buyers than to small purchasers. A contrast of these price declines in cold-rolled strip to those in plates or shapes reveals very strikingly the effect of concentrated as against diffused buying power.

Average price per ton

Size of shipment (tonnage classes)	Mill net	Net extras	Base price
Under 3	$138.63	$73.21	$66.51
3 to 10	145.41	72.21	74.37
10 to 30	104.84	45.77	60.25
30 to 100	92.67	32.64	60.78
100 to 300	92.23	34.27	58.51
300 to 1,000	70.88	11.14	59.55
1,000 to 3,000			
3,000 to 10,000			
10,000 and over			
Total	87.03	27.25	60.18

PART III

SIGNIFICANCE OF THE DATA

THE SIGNIFICANCE TO THE CONCENTRATION OF ECONOMIC POWER

One of the functions of the Temporary National Economic Committee is to determine the causes of the concentration of economic power; therefore a first concern of this study is the relationship between the granting of price concessions to large buyers and the development of economic concentration.

Steel is the basic durable good of the economy. It is essential to building and construction, railroads, automobiles, containers, shipbuilding, machinery and tools, highways, oil, gas, water, mining, and many other vast fields of enterprise. Although it is held by some that steel may presently be replaced by plastics in much the same way that wood has been replaced by steel, the economy for many years to come will undoubtedly be founded upon steel and will consequently be affected immediately by the policies and practices of the steel industry.

Of most interest to this study is the industry policy which brings about these marked declines in the various elements of the steel price structure as the size of the shipment increases.[1] On the charts it was shown that these reductions are sufficient to cause the yield to the mill—the mill net—to drop steadily with larger and larger orders.[2]

The percent change in the mill net attributable to the actual variation in extras was also charted; and it was found that a substantial proportion of the decline in the mill nets was due to very extensive decreases in extras. Since extras are determined by quality and quantity factors, it is evident that the advantages of large quantity generally outweigh the exacting quality specifications frequently demanded on large orders.

What perhaps was even more significant was the discovery that the steel companies, to obtain large orders, cut even their base prices, that is their "policy" prices. The act of lowering the base price is especially significant, because it reflects a reduction in that element of the price structure which theoretically is immune, first, from any variations due to quality and quantity considerations and, second, from differences in freight charges. Reductions in the base price to large buyers are thus purely discriminatory, theoretically explainable neither on technological nor geographic grounds.

[1] Before the Temporary National Economic Committee, this interchange took place between Commissioner Leon Henderson and Benjamin F. Fairless, President, United States Steel Corporation:

"Mr. HENDERSON. Were there any of your buyers paying the base price plus the standard extras?" (Fourth quarter 1937 to second quarter 1938).

"Mr. FAIRLESS. Yes; there would be some.

"Mr. HENDERSON. But there would be other buyers who were getting substantial concessions on price in order for you to meet competition?

"Mr. FAIRLESS. That is correct."—(Hearings before the T. N. E. C., Part 19, p. 10534.)

[2] Also before the Temporary National Economic Committee, Dr. Theodore Kreps, economic consultant to the committee, asked this question of Dr. Theodore Yntema, statistician for the U. S. Steel Corporation:

"Dr. KREPS. * * * As I understand it, mill-net prices reflect pretty well what the consumer pays to the industry—at least that is in substance your contention. Is that correct?

"Dr. YNTEMA. I think that is a fair statement."—(Hearings before the T. N. E. C., Part 26.)

That concessions might be made to large buyers is to be expected for certain steel products from the informed nature of much steel buying. This has been described by spokesmen for the United States Steel Corporation as follows:

This readiness of a buyer to shift from one producer to another because of a lower price is due to the informed character of the buying of steel. Technical knowledge of the product to be purchased is available through laboratories of individual purchasers, trade associations, and independent research agencies; exactly the same steel may, for the most part, be obtained from any one of a number of producers. Furthermore, the large size of individual purchases makes it worth while for buyers to seek the lowest possible price. This propensity to shop is enhanced by knowledge of latest price quotations, by familiarity with psychological and other factors resulting in a "buyers" or a "sellers" market for all or particular products, and by a general understanding of approximate costs of steel production; indeed, a few purchasers of steel operate completely integrated steel works to supply a portion of their requirements, and others have semi-integrated and non-integrated capacity.[3]

Whatever the cause, the obvious effect of these concessions to large buyers is that small purchasers are placed at a competitive disadvantage. No elaboration is needed in describing the position of a small manufacturer who in February 1939 was forced to pay for a ton of cold rolled strip a delivered value of $154.69, netting the mill $145.41, as against a large competitor who, for this product, paid a delivered value of only $76.19—a mill net of but $70.88.[4]

It is noteworthy that those steel products marked by the most extensive declines in price to large buyers are products which are consumed principally by highly concentrated industries. Of the eight products examined, the largest concessions were made on hot and cold rolled strip.

By far the largest consuming channel of strip steel is the highly concentrated automotive industry. Out of a distribution of strip steel in 1939, amounting to 2,200,700 net tons, the automotive industry consumed 1,129,800 tons,[5] and it is obvious that a few members of that highly concentrated industry are capable of exerting tremendous buying power.

* * * in the automotive, container, agricultural implements, household durable goods, and shipbuilding industries, a relatively few large companies comprise a substantial percentage of the total production of their respective industries. In purchasing their steel requirements these large companies usually come into the market with orders of considerable magnitude.[6]

At the other extreme, however, those steel products marked by the least extensive declines in price to large buyers are consumed principally by a large number of small buyers. The two products for which the price concessions were smallest are steel plates and heavy structural shapes. The largest consuming channel of both shapes and plates consists of contractors and fabricators for the construction industries. Out of a distribution of steel shapes, amounting in 1939 to 2,803,600 net tons, 1,687,600 were consumed by construction contractors and fabricators; and of a distribution of 2,677,500 net tons of plates, 543,000 were taken by this group of relatively small buyers, while, in addition, 237,200 tons were consumed by the equally

[3] United States Steel Corporation—Some Factors in the Pricing of Steel.—Hearings before the T. N. E. C., Part 26, Exhibit 1410.)

[4] Frequently because of the exacting specifications demanded by large steel buyers, the steel sold to the large buyer is of even better quality than that on which the small purchaser has to pay a much higher price.

[5] Iron Age, March 21. 1940.

[6] United States Steel Corporation op. cit.

atomistic channel of jobbers, dealers, and distributors, 299,000 by exports, and 198,500 by miscellaneous industries.[7]

The construction industry is among the least concentrated of the Nation's industrial fields. There is no great company within it which is able to exert buying pressure at all commensurate with that which can be applied by any one of the three large automobile producers.

This, then, would certainly tend to substantiate the position that the extent of the price concessions generally varies directly with the degree of economic concentration in the consuming industries.

There is perhaps a further reason which explains why price concessions on steel plates and shapes are relatively small. A considerable amount of these items is purchased directly or indirectly by the Federal Government. A calculation made from data in the Division of Construction and Public Employment of the Bureau of Labor Statistics reveals that of the total production of structural and reinforcing steel a large percentage—55.5 percent in 1936, 33.3 percent in 1937, and 47.9 percent in 1938—was purchased for use on projects financed by Federal funds. The fact that in 1938 almost half of the total production of structural and reinforcing steel was bought with Federal funds for use on projects, primarily those of the P. W. A.—to say nothing of additional purchases by other governmental agencies—makes it evident that the Government is the leading buyer for this type of steel products. But, as will be developed later in this study, the Government, despite its large purchases, does not exert the effective buying pressure customarily applied by large private purchasers.

It is obviously impossible to determine the exact extent to which the granting of material price concessions has contributed to the growth of economic concentration. In making any such determination it would be necessary to devise proper adjustments for all the other factors which may induce concentration, such as greater financial strength, technological advantages in operating efficiency, etc.; and existent data are not adequate for this purpose. Nevertheless it is self-evident that the practice of granting concessions is of not inconsiderable importance in perpetuating highly concentrated economic control, once it has become established.

The necessity faced by small producers of paying, in some cases, over twice as much for steel as their large competitors not only serves to limit their ability to compete but also operates to keep numbers of them out of the field altogether. Once the ability to purchase in very large quantities is established, substantial price concessions may be expected to result, and the effect of these concessions is to perpetuate and intensify the concentration existing. In this way, economic concentration tends to feed on itself.

A less obvious, but nonetheless equally significant, aspect of these price concessions is their relationship to the type of pricing system practiced by the steel industry—the basing point system.

A characteristic of the basing point system is the widespread dissemination of published base prices, freight rates, extras, and other elements of the price structure. It has been contended that when the published prices are well above actual prices to large buyers, the very publication of these prices may mislead the small buyer who possesses

[7] Iron Age, March 21, 1940.

inadequate market information and relies upon the published data as the source of his market information.

In testimony before the Temporary National Economic Committee, Mr. A. H. Feller, Special Assistant to the Attorney General, asked this question of Eugene G. Grace, president of Bethlehem Steel Co.:[8]

> Mr. Grace, I think we have come to a somewhat important point here. The base price remained at the high level. So far as the operation of your company and the United States Steel Corporation were concerned, you weren't getting that price. Your realization was substantially lower, and yet some purchasers were paying that price and they included certain types of consumption and also small buyers.
>
> Now by keeping that base price at that fictitious level, to use your own words, weren't the small buyers in effect being penalized?

And further—

> Didn't the base price, although not adhered to over the average because of the conditions of the market, didn't the base price have this significance: That it resulted in some purchasers who perhaps because of inferior knowledge with respect to market conditions or perhaps because of insufficient buying power, didn't it result in a discrimination between purchasers so placed and purchasers who knew more about the market and who could buy more?

Although Mr. Grace did not think that the publication of fictitious prices penalizes the small buyer, this idea advanced by Mr. Feller is extremely suggestive. Unfortunately it is impossible with present information to determine the extent to which small buyers actually are misled by the published prices. If they do accept them as bona fide, or at least as close approximations of the prices paid by their large competitors, the publication of these prices, as a characteristic of the basing point system, is undoubtedly one of the reasons that the price concessions are as large as, in fact, they prove to be.

THE SIGNIFICANCE TO THE GOVERNMENT

Earlier in this study it was pointed out that the Federal Government buys very large quantities of certain types of steel products. Are, then, the substantial price concessions made to large private buyers offered also to the Government? Such does not appear to be the case. From testimony of leading steel producers before the Temporary National Economic Committee and from other sources it has been learned that the Federal Government, even on extremely large orders, usually pays the published price.

In testifying before the Temporary National Economic Committee, Mr. Eugene Grace, president of the Bethlehem Steel Corporation, stated that, while price concessions are frequently made to private buyers, his company nearly always bids the published prices on orders from the Government. Mr. A. H. Feller, Special Assistant to the Attorney General, interrogated Mr. Grace as follows:

> Mr. FELLER. Is it correct, then, Mr. Grace, to say that, during this period when the base price was fictitious as far as the trade was concerned, it was not fictitious as far as the United States Government was concerned?
>
> Mr. GRACE. I have told you what our policy was in quoting to the United States Government. That is as far as I can go.
>
> Mr. FELLER. Your policy was that the published base price was a real price?
>
> Mr. GRACE. That is the basis upon which we quoted and undertook to get Government business * * *. Our policy has been as I have said to quote the United States Government official published prices.[9]

[8] Hearings before the T. N. E. C., Part 19, pp. 10593. 10595.
[9] Hearings before the T. N. E. C. Part 19, pp. 10596, 10597.

There can be little doubt that the Government is in the role of the "least favored buyer," and that its inability to obtain the price concessions regularly given to large private buyers is indeed costly to the Nation's taxpayers.

A number of reasons lie behind this failure of the Federal Government to obtain price concessions. Among them are certain purchasing policies pursued by the Procurement Division of the Treasury Department.[10] An additional reason is that producers of products such as steel necessarily realize that, in order to operate in terms of the legislation passed by Congress, the administrative agencies of the Government are compelled to purchase, almost regardless of price, the items required.

Perhaps an even more pointed explanation is that, unlike a number of large private buyers, the Government has apparently not seen fit for some years to erect and operate its own steel works. Two large private buyers of steel—Ford Motor Co. and International Harvester Co.—now operate completely integrated steel works to supply a portion of their requirements. And half a dozen others—American Car & Foundry Co., American Locomotive Co., Atchison, Topeka & Santa Fe Railroad Co., Continental Can Co., Simonds Saw & Steel Co., and Timken Roller Bearing Co., Inc.—have semi-integrated and non-integrated steel-making capacity.[11]

This apparent inability of the Government to threaten the production of its own steel requirements has undoubtedly been of considerable importance in causing the Government to pay prices for steel usually acceptable only to the smallest and least effective private buyers.

The existence of these price concessions to large buyers is of further significance to the Federal Government. Analyses of price movements, particularly in times of national emergency, are often of greatest importance in the formulation of policy. Much of this price information can be obtained regularly under present circumstances only from published sources. The possible failure of these published prices to reflect accurately the movement of prices actually paid can obviously become a serious problem to the Government.

It is very evident that in the case of steel the published prices are quite different from the actual prices paid by large buyers.[12] The Government is thus unable to discover on the basis of available price information the actual prices paid for the Nation's basic durable good. In this time of national emergency increases in the actual prices of steel may well be taking place through reductions in the concessions allowed to large buyers; but such increases can in no way be discerned through analyses of existent steel price information. The very presence of these great concessions from the known prices thus calls for more accurate price information, at least for steel products, than is today available.

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[10] For an analysis of these policies, see M. A. Copeland, D. M. Barbour, and C. C. Linnenberg, Jr., Government Purchasing—An Economic Commentary, T. N. E. C. Monograph No. 19.

[11] United States Steel Corporation, op. cit.

[12] Said Mr. Eugene G. Grace, president, Bethlehem Steel Co., in testimony before the Temporary National Economic Committee:

"Our established prices were not prevailing nor obtainable nor controlling. In speaking of the price situation that existed at that time (1938), I naturally would have in mind the prices currently which we were obtaining for our product. They didn't tie into the published prices which you call official prices in any sense of the word."—(Hearings before the T. N. E. C., Part 19.)

THE SIGNIFICANCE TO THE ECONOMIC ARGUMENTS OF THE STEEL INDUSTRY

An incidental, though none the less interesting, aspect of these price concessions is their relation to the economic arguments advanced by spokesmen of the steel industry.

The United States Steel Corporation submitted to the Temporary National Economic Committee a series of exhibits in the form of pamphlets. These exhibits were prepared by a special staff under the direction of Dr. Theodore Yntema, of the University of Chicago. Inasmuch as no refutation of the basic economic theses advanced therein has as yet been offered by other steel producers, it is assumed that the arguments expressed represent the opinion of the steel industry.

One of the principal arguments advanced is that the industry, insofar as variable costs are concerned, is one of constant costs. In every industry costs are divided between those which are fixed and those which are variable. As is stated by spokesmen of the United States Steel Corporation:

> Costs must of necessity fall into one of two categories. Some items of cost are the same regardless of the amount of steel and other products produced providing there is not a complete shut-down. These costs are known as "fixed costs" or "overhead costs." There are other items of cost termed "variable costs" or "incremental costs" or "additional costs" which are not the same regardless of volume but increase with increases in the volume of steel produced and sold. These costs can be diminished by cutting down the production of steel. The fixed costs, on the other hand, cannot be diminished except by complete shut-down, but they can be spread over a greater number of units of products by increasing production.[13]

After examining cost data of the United States Steel Corporation and making numerous adjustments—the propriety of which need not be examined here—the statisticians of the United States Steel Corporation concluded that variable costs are constant.

> Taking the costs shown by the profit and loss statements of the corporation from 1927 to 1938 and adjusting to 1938 wage, interest, and tax rates and to 1938 prices and other operating conditions, this study shows that under 1938 conditions the costs of the first or fixed type amount to $182,100,000 per year while those of the second type, the additional costs, are approximately $55.73 per weighted ton of product shipped * * *
> Within the range of actual experience the additional costs, at 1938 wage and tax rates and 1938 material prices, arising with the shipment of each additional ton remained constant at $55.73. This is true when production averages as high as 90.4 percent and as low as 17.7 percent of capacity for the entire year.[14]

Except when production is at very low rates of capacity, variable costs were found to bulk much larger than fixed costs. Thus in February 1939, when production was at approximately 55 percent of capacity, the percentage of fixed cost to total cost, according to the study of the steel corporation, would be between 26.0 and 22.9 percent.[15] In other words, at the time the statistical data in this study were collected, variable costs were over 75 percent of total costs.

While it is not the purpose of this report to inquire into the contention of the steel spokesmen that variable costs are constant,[16] the data on price concessions present this interesting situation.

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[13] United States Steel Corporation, Steel Prices, Volume, and Costs.—(Hearings before the T. N. E. C., Part 26, Exhibits 1416, 1417.)

[14] Ibid.

[15] Ibid., table 28.

[16] For an analysis of the cost data submitted by the Steel Corporation, see hearings before the T. N. E. C., Part 26 (testimony of Martin Taitel, Senior Consulting Economist of the Work Projects Administration).

On one hand spokesmen for the steel industry state that variable costs in their industry are constant and that an increase in the volume of business would not result in a reduction of these unit variable costs, which, as noted, comprised in February 1939 over 75 percent of total costs. On the other hand, it is found that during that same month steel producers were granting very sizable price concessions for the apparent purpose of obtaining large orders.

This inconsistency might be explained on the grounds that a difference exists between the economic conclusions to be deduced from these data and the actual day-to-day operating behavior of a large corporation. Thus, in the words of Dr. Yntema testifying before the Temporary National Economic Committee—

> Again Dr. deChazeau said, "If other things cannot be assumed equal, Dr. Yntema's analysis of price elasticity of demand cannot be considered a criterion of desirable pricing policy even for the United States Steel Corporation." With this I should agree but I should point out that we never thought that it should be regarded a criterion of desirable pricing policy by the United States Steel Corporation.[17]

Nevertheless, the granting of the price concessions, substantial as they are, would be much more understandable were the industry one of decreasing costs. On the basis of the assumption that variable costs are constant, the month of February 1939 saw large price concessions being made for the sole purpose of spreading fixed costs, amounting during that month to less than 25 percent of total costs, over a larger number of units. It seems at least questionable whether this greater diffusion of the distinctly minor element of fixed costs would constitute sufficient justification for the granting of price concessions so large that mill nets were reduced by amounts up to and over 50 percent.

Actually there is some factual basis for assuming that in iron and steel variable costs per unit do decline as output is increased. In 1935 the Bureau of Labor Statistics conducted a study of the effect of varying rates of capacity utilization in steel upon the number of man-hours required per unit of output. It was found that as the percent of capacity utilized rose from 20 to 25 percent to 55 to 60 percent, the man-hours required per unit declined noticeably. That this behavior is not exceptional to the iron and steel industry is to be seen from a comparison with two other industries for which data of this nature are available—the cement industry and the brick and tile industry. The effect of increasing capacity utilization upon unit man-hour requirements in these three industries is shown in the following chart.[18]

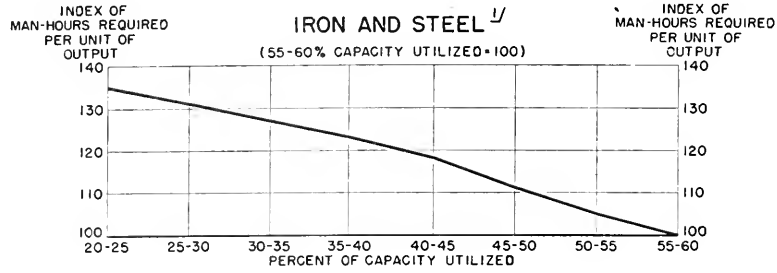
The behavior for the steel industry, as shown on the chart, may understate the decline which under present conditions actually takes place. That study was based upon data collected in 1935, a period prior to the widespread adoption of the continuous process rolling mill. It is more than likely that the introduction of this new process has resulted in even greater reductions in unit man-hour requirements. Also, as may be noted from the chart, the data extend only to 55 to 60 percent of capacity; if data were available for higher rates of capacity utilization, they might well show, up to almost the very highest rates, a still more substantial decline.

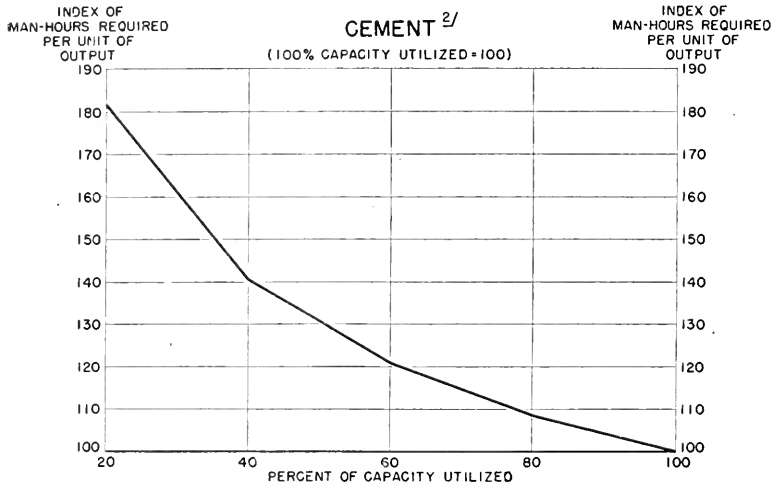
[17] Hearings before the T. N. E. C., Part 19.

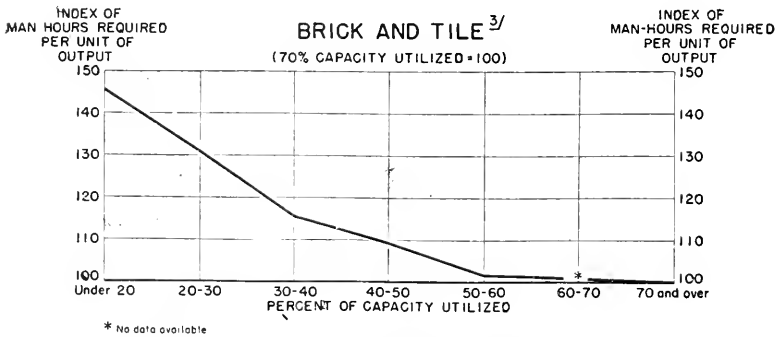
[18] It was not a purpose of these studies to separate man-hours worked into "fixed" and "variable" categories. Arbitrary differentiations of that type, while attempted by spokesmen of the steel industry, are rarely to be found in statistical studies of the relationship between the quantity of labor and the rate of production.

CHART IX

EFFECT OF VARIATIONS IN CAPACITY UTILIZATION UPON MAN-HOURS REQUIRED PER UNIT OF OUTPUT







* No data available

[1] Bureau of labor Statistatics, Monthly Labor Review, vol. 40, May 1935, p. 1161.
[2] National Research Project, Mechanization in the Cement Industry, 1939, p. 23.
[3] National Research Project, Productivity and Employment in Selected Industries, Brick and Tile, 1939, p. 117.

A second economic argument advanced by spokesmen for the steel industry is that the existence of competition within the basing point system is indicated by the presence of freight absorption.[19] The reasoning behind this contention is that the very act, by producers, of bearing part of the freight charges themselves indicates a sacrifice on their part which could be demanded only by competition. Thus, presumably, the greater the competition among producers, the greater the freight absorption.

Reference is frequently made to this idea in testimony and exhibits offered by spokesmen for the steel industry. In concise form the argument even appears regularly in a caption introducing steel price information published by the trade journal, Iron Age.

> Steel prices on these pages are f. o. b. basing points (in cents per pound) unless otherwise indicated. On some products either quantity deductions or quantity extras apply. In many cases gage, width, cutting, physical, chemical extras, etc., apply to the base price. Actual realized prices to the mill, therefore, are affected by extras, deductions, and *in most cases freight absorbed to meet competition.*[20]

Actually the data collected in this study indicate that the very converse of this contention holds true. It is on small shipments with their limited price concessions that the amount of freight absorption is generally greatest; and, as the size of the shipment and the price concessions increase, the amount of freight absorption generally declines. This behavior is shown in chart X.

What appears to happen in most cases is that large buyers are successful in getting substantial price concessions from mills located nearby and, further, that as the distance from the mills to buyers increases producers are less able to reduce their mill nets to such an extent that the delivered price, including the greater freight, can meet the delivered price of the mills near to the buyer. On the other hand, small buyers, being unable to obtain these substantial price concessions, are more inclined to "shop around" in the hope of obtaining slightly better prices. A concession of almost any kind would frequently obtain the order of the small buyer. On these small orders the more distant mills are not faced with the competitive necessity of making substantial price concessions; this obviously gives them a greater margin in which they can include the absorption of freight.

If such is actually true, the contention that the degree of competition varies with the amount of freight absorption must be discarded as untenable; otherwise, on the basis of the data presented in the following chart, it would follow that competition would generally be least intense in the case of the largest orders on which price concessions are greatest, whereas competition would be most intense on the smallest orders which bear only limited price concessions.

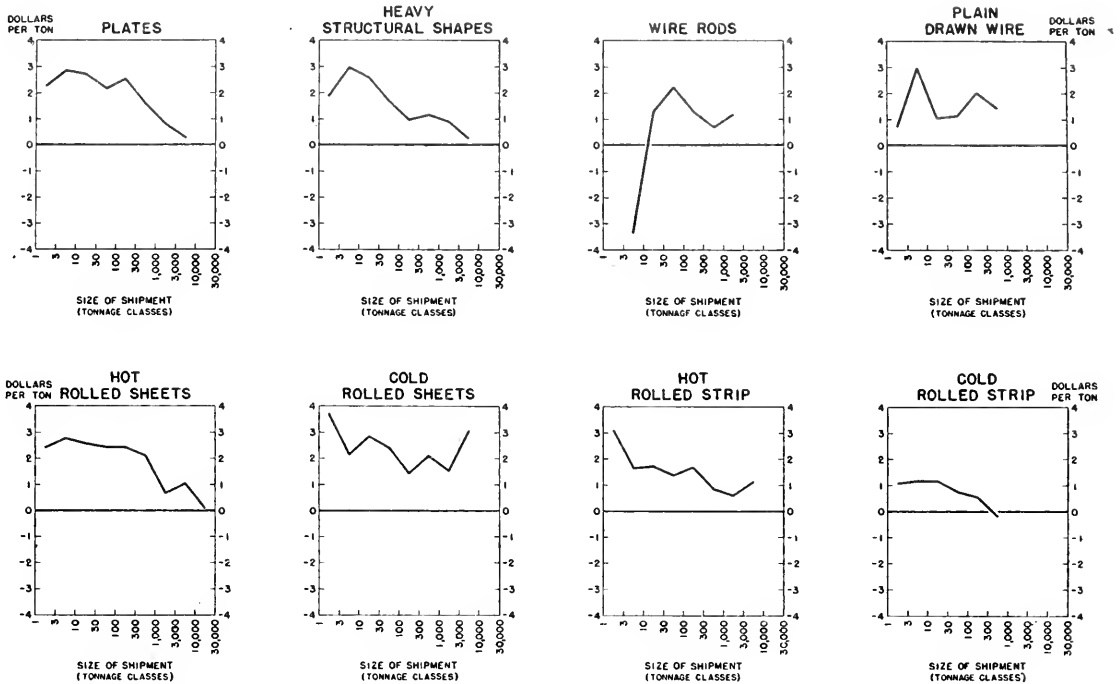
[19] If a shipment is made from a mill from which the freight rate to the point of delivery is greater than the freight rate from the governing basing point, the difference in these freight rates is called freight absorption.

[20] Recent issues of Iron Age, e. g. that of August 22, 1940. (Source not italicized.)

CHART X

VARIATIONS IN AVERAGE FREIGHT ABSORBED PER TON BY SIZE OF SHIPMENT

UNITED STATES, FEBRUARY 1939



APPENDIX

For further information as to these data please see Hearings before the Temporary National Economic Committee, Part 27.

FORM B.—*Distribution and pricing of selected steel products*

Company_____ Period { Month_____ / Year_____

Name and location of works_____ Basing point on which delivered price

Product_____ was computed_____

Domestic shipments to consuming districts [1]	Tonnage shipped, net or gross tons (state which)	Total invoiced delivered value	Freight charges added to base prices to arrive at invoiced value per column (3)	Actual freight paid or allowed on shipments from mill to destination	Total extras included in invoice delivered value per column (3)
(1)	(2)	(3)	(4)	(5)	(6)
DISTRICT	*Tons*	*Amount in dollars*	*Amount in dollars*	*Amount in dollars*	*Amount in dollars*
Maine					
New Hampshire					
Vermont					
Massachusetts					
Rhode Island					
Connecticut (except Fairfield County)					
Metropolitan New York					
Eastern and central New York					
Buffalo					
Philadelphia					
Eastern Pennsylvania					
Pittsburgh					
Cleveland					
Youngstown					
North Ohio River					
Canton, Massillon, Mansfield					
South Ohio River					
Ohio—all other					
Indiana (except Lake County)					
Chicago					
Illinois—all other					
Detroit					
Michigan—all other					
Wisconsin					
Minnesota					
Iowa					
St. Louis					
Kansas City					
Missouri—all other					
North Dakota					
South Dakota					
Nebraska					
Kansas					
Delaware					
Baltimore					
Maryland—all other except 2 counties					
District of Columbia					
Virginia					
West Virginia					
North Carolina					
South Carolina					
Georgia					

[1] Distribution of selected steel products by consuming districts is requested for all shipments direct to consumers excluding exports, f. o. b. mill sales, shipments to other plants or warehouses of the same or affiliated companies, and shipments to jobbers' warehouses. Consuming districts are defined in schedule enclosed with this form.

FORM B.—*Distribution and pricing of selected steel products*—Continued

Domestic shipments to consuming districts	Tonnage shipped, net or gross tons (state which)	Total invoiced delivered value	Freight charges added to base prices to arrive at invoiced value per column (3)	Actual freight paid or allowed on shipments from mill to destination	Total extras included in invoice delivered value per column (3)
(1)	(2)	(3)	(4)	(5)	(6)
	Tons	*Amount in dollars*	*Amount in dollars*	*Amount in dollars*	*Amount in dollars*
Florida					
Kentucky					
Tennessee					
Birmingham					
Alabama—all other					
Mississippi					
Arkansas					
Louisiana					
Oklahoma					
Texas					
Montana					
Idaho					
Wyoming					
Colorado					
New Mexico					
Arizona					
Utah					
Nevada					
Washington					
Oregon					
California:					
Southern					
Northern					
Total of above items					
Other shipments: [2]					
Exports					
F. o. b. mill sales [3]					
Shipments to plants or warehouses of same or affiliated companies [4]					
Shipments to jobbers' warehouses					

[2] These items need not be repeated on reports for each basing point. It is understood that they are not to be included in the distribution of shipments by consuming districts within the United States.

[3] "F. o. b. mill sale" means a sale priced at the mill and delivered to the customer at the mill without freight allowance.

[4] "Affiliated company" means any company described as a parent, subsidiary, or affiliated company in the reporting company's annual reports or in any registration statement filed by it with the Securities and Exchange Commission.

TABLE 1.—*Steel shipments by size of shipment—all reported items by products—aggregate tonnage and sales—United States, February 1939*

Size of shipments (tonnage classes)	Item count	Tonnage (aggregate)	Delivered value	Freight charged	Net extras	Base price	Freight paid	Freight absorbed	Mill net
Plates:									
Under 3	36	53	$3,533	$436	$854	$2,243	$602	$166	$2,931
3 to 10	91	467	26,012	3,154	2,264	20,594	4,899	1,745	21,113
10 to 30	100	1,967	106,391	12,545	7,519	86,327	19,098	6,553	87,293
30 to 100	137	7,548	395,460	37,396	32,666	325,398	62,667	25,271	332,793
100 to 300	100	17,523	909,212	72,776	89,077	747,359	128,976	56,200	780,236
300 to 1,000	60	30,915	1,526,585	103,159	135,764	1,287,662	178,530	75,371	1,348,055
1,000 to 3,000	18	27,231	1,291,042	54,046	80,943	1,156,053	134,477	80,431	1,156,565
3,000 to 10,000	3	10,739	491,713	12,547	38,860	440,306	15,078	2,531	476,635
10,000 and over									
Total	545	96,443	4,749,948	296,059	387,947	4,065,942	544,327	248,268	4,205,621
Heavy structural shapes:									
Under 3	19	28	1,769	320	256	1,193	372	52	1,397
3 to 10	53	307	16,314	3,082	545	12,687	4,065	983	12,249
10 to 30	75	1,346	69,143	10,190	1,790	57,163	15,548	5,358	53,595
30 to 100	95	5,573	293,994	44,427	11,086	238,481	62,163	17,736	231,831
100 to 300	68	11,970	607,419	90,545	19,646	497,228	117,993	27,448	489,426
300 to 1,000	56	28,434	1,378,493	145,033	53,128	1,180,332	220,717	75,684	1,157,776
1,000 to 3,000	12	18,341	815,566	42,717	35,839	737,010	59,075	16,358	756,491
3,000 to 10,000	3	13,922	619,351	30,698	28,773	559,880	33,567	2,869	585,784
10,000 and over									
Total	381	79,921	3,802,049	367,012	151,063	3,283,974	513,500	146,488	3,288,549
Wire rods: [1]									
Under 3	2	13	797	96	125	576	69	−27	728
3 to 10	11	247	12,517	1,294	729	10,494	1,611	317	10,906
10 to 30	21	1,181	60,216	3,839	5,589	50,788	7,194	3,355	53,022
30 to 100	19	3,587	168,967	6,916	8,110	153,941	18,472	11,556	150,495
100 to 300	24	11,139	521,717	31,491	35,241	454,985	46,730	15,239	474,987
300 to 1,000	5	10,974	455,926	13,249	19,663	423,014	32,285	19,036	423,641
1,000 to 3,000									
3,000 to 10,000									
10,000 and over:									
Total	82	27,141	1,220,140	56,885	69,457	1,093,798	106,361	49,476	1,113,779
Plain drawn wire:									
Under 3	38	49	3,553	337	845	2,371	395	58	3,158
3 to 10	45	217	16,490	1,305	3,314	11,871	1,956	651	14,534
10 to 30	74	1,412	95,517	7,428	9,296	78,793	10,998	3,570	84,519

TABLE 1.—*Steel shipments by size of shipment—all reported items by products—aggregate tonnage and sales—United States, February 1939*—Continued

Size of shipments (tonnage classes)	Item count	Tonnage (aggregate)	Delivered value	Freight charged	Net extras	Base price	Freight paid	Freight absorbed	Mill net
Plain drawn wire—Continued.									
30 to 100	56	3,245	$201,893	$15,743	$19,734	$166,416	$19,993	$4,250	$181,900
100 to 300	22	3,762	212,657	12,942	9,654	190,061	19,748	6,806	192,909
300 to 1,000	15	8,171	465,199	21,971	25,125	418,103	31,824	9,853	433,375
1,000 to 3,000									
3,000 to 10,000									
10,000 and over									
Total	250	16,856	995,309	59,726	67,968	867,615	84,914	25,188	910,395
Hot rolled sheets:									
Under 3	57	8[illegible]	5,575	589	1,498	3,488	816	227	4,759
3 to 10	93	517	30,455	2,884	5,509	22,062	4,895	2,011	25,560
10 to 30	136	2,495	148,929	14,237	27,086	107,606	22,811	8,574	126,118
30 to 100	143	8,053	459,469	37,939	85,657	335,873	61,651	23,712	397,818
100 to 300	113	19,897	1,118,564	67,334	251,373	799,857	126,857	59,523	991,707
300 to 1,000	82	43,391	2,314,398	115,242	490,399	1,708,757	211,846	96,604	2,102,552
1,000 to 3,000	31	52,129	2,776,168	170,270	594,202	2,011,696	232,846	62,576	2,543,322
3,000 to 10,000	8	36,132	1,708,403	48,125	237,461	1,422,817	110,025	61,900	1,598,378
10,000 and over	2	28,214	1,304,122	15,059	158,359	1,130,704	22,695	7,636	1,281,427
Total	665	190,910	9,866,083	471,679	1,851,544	7,542,860	794,442	322,763	9,071,641
Cold rolled sheets:									
Under 3	15	19	1,580	191	196	1,193	272	81	1,308
3 to 10	50	279	20,850	1,468	1,847	17,535	2,621	1,153	18,229
10 to 30	50	907	63,610	4,160	3,007	56,443	6,951	2,791	56,659
30 to 100	44	2,393	159,574	7,531	2,959	149,084	14,967	7,436	144,607
100 to 300	27	4,789	310,344	19,173	8,093	283,078	28,650	9,477	281,694
300 to 1,000	32	18,558	1,156,908	42,668	11,242	1,102,998	83,984	41,316	1,072,924
1,000 to 3,000	6	11,076	690,226	21,749	9,955	658,522	49,372	27,623	640,854
3,000 to 10,000	8	34,545	2,148,806	61,547	9,758	2,077,501	180,978	119,431	1,967,828
10,000 and over	1	10,353	624,229	0	−9,628	633,857	5,722	5,722	618,507
Total	233	82,919	5,176,127	158,487	37,429	4,980,211	373,517	215,030	4,802,610
Hot rolled strip:									
Under 3	53	74	5,166	609	1,413	3,144	841	232	4,325
3 to 10	74	377	25,218	2,671	6,109	16,438	3,664	993	21,554
10 to 30	72	1,377	86,377	8,688	20,852	56,837	11,189	2,501	75,188
30 to 100	75	4,349	264,136	24,253	62,293	177,590	30,888	6,635	233,248
100 to 300	47	7,727	423,208	28,341	86,341	308,526	43,007	14,666	380,201

300 to 1,000	30	14,840	736,299	49,916	103,216	583,167	64,406	14,490	671,893
1,000 to 3,000	13	20,505	950,024	48,868	94,197	806,959	65,364	16,496	884,660
3,000 to 10,000	4	18,278	786,511	15,907	30,487	740,117	48,240	32,333	738,271
10,000 and over									
Total	368	67,527	3,276,939	179,253	404,908	2,692,778	267,599	88,346	3,009,340
Cold rolled strip:									
Under 3	62	79	10,470	793	4,850	4,827	1,030	237	9,440
3 to 10	76	400	59,949	3,607	25,873	30,469	4,616	1,009	55,333
10 to 30	49	876	101,160	5,670	42,526	52,964	7,702	2,032	93,458
30 to 100	72	3,805	379,928	19,871	126,387	233,670	26,820	6,949	353,108
100 to 300	20	3,378	329,697	15,845	112,995	200,857	21,536	5,691	308,161
300 to 1,000	13	6,464	562,367	24,826	149,652	387,889	32,042	7,216	530,325
1,000 to 3,000	2	2,726	216,515	1,727	30,395	184,393	2,270	543	214,245
3,000 to 10,000									
10,000 and over									
Total	294	17,728	1,660,086	72,339	492,678	1,095,069	96,016	23,677	1,564,070
Sheet and tin plate bars: [1]									
Under 3									
3 to 10									
10 to 30									
30 to 100									
100 to 300	1	110	3,475	61	0	3,414	204	143	3,271
300 to 1,000	1	716	21,214	996	81	20,137	1,033	37	20,181
1,000 to 3,000	4	7,372	224,186	6,600	315	217,271	9,029	2,429	215,157
3,000 to 10,000									
10,000 and over									
Total	6	8,198	248,875	7,657	396	240,822	10,266	2,609	238,609
Tin plate: [2]									
Under 3	3	4	373	26	14	333	27	1	346
3 to 10	11	58	6,015	279	−127	5,863	304	25	5,711
10 to 30	13	232	23,743	1,601	−571	22,713	1,998	397	21,745
30 to 100	34	2,070	209,362	13,723	−3,466	199,105	17,780	4,057	191,582
100 to 300	29	5,380	570,420	41,572	−17,994	546,842	50,021	8,449	520,399
300 to 1,000	10	4,982	523,145	29,058	−14,285	508,372	29,677	619	493,468
1,000 to 3,000	3	5,601	560,594	28,794	−13,820	545,620	25,372	−3,422	535,222
3,000 to 10,000	2	10,709	1,081,430	64,052	−66,499	1,083,877	23,265	−40,787	1,058,165
10,000 and over									
Total	105	29,036	2,975,082	179,105	−116,748	2,912,725	148,444	−30,661	2,826,638
Total of products	2,929	616,679	33,970,638	1,848,202	3,346,642	28,775,794	2,939,386	1,091,184	31,031,252

[1] Wire rods and sheet and tin plate bars in gross tons; all others in net tons.
[2] Sample product is 95 pounds tin plate; 100 pounds base box is standard; negative extras in part caused by this difference.

TABLE 2.—*Steel shipments by size of shipment—all reported items by products—average price per ton—United States, February 1939*

Size of shipments (tonnage classes)	Delivered value	Freight charged	Net extras	Base price	Freight paid	Freight absorbed	Mill net
Plates:							
Under 3	$66.66	$8.23	$16.11	$42.32	$11.36	$3.13	$55.30
3 to 10	55.70	6.75	4.85	44.10	10.49	3.74	45.21
10 to 30	54.09	6.38	3.82	43.89	9.71	3.33	44.38
30 to 100	52.39	4.95	4.33	43.11	8.30	3.35	44.09
100 to 300	51.88	4.15	5.08	42.65	7.36	3.21	44.52
300 to 1,000	49.38	3.34	4.39	41.65	5.78	2.44	43.60
1,000 to 3,000	47.41	1.99	2.97	42.45	4.94	2.95	42.47
3,000 to 10,000	45.79	1.17	3.62	41.00	1.41	.24	44.38
10,000 and over							
Total	49.25	3.07	4.02	42.16	5.64	2.57	43.61
Heavy structural shapes:							
Under 3	63.18	11.43	9.14	42.61	13.29	1.86	49.89
3 to 10	53.14	10.04	1.78	41.32	13.24	3.20	39.90
10 to 30	51.37	7.57	1.33	42.47	11.55	3.98	39.82
30 to 100	52.75	7.97	1.99	42.79	11.15	3.18	41.60
100 to 300	50.74	7.56	1.64	41.54	9.85	2.29	40.89
300 to 1,000	48.48	5.10	1.87	41.51	7.76	2.66	40.72
1,000 to 3,000	44.46	2.33	1.95	40.18	3.22	.89	41.24
3,000 to 10,000	44.49	2.20	2.07	40.22	2.41	.21	42.08
10,000 and over							
Total	47.57	4.59	1.89	41.09	6.42	1.83	41.15
Wire rods: [1]							
Under 3							
3 to 10	61.30	7.38	9.62	44.30	5.30	−2.08	56.00
10 to 30	50.67	5.24	2.95	42.48	6.52	1.28	44.15
30 to 100	50.98	3.25	4.73	43.00	6.09	2.84	44.89
100 to 300	47.11	1.93	2.26	42.92	5.15	3.22	41.96
300 to 1,000	46.84	2.83	3.16	40.85	4.20	1.37	42.64
1,000 to 3,000	41.54	1.21	1.79	38.54	2.94	1.73	38.60
3,000 to 10,000							
10,000 and over							
Total	44.96	2.10	2.56	40.30	3.92	1.82	41.04
Plain drawn wire:							
Under 3	72.51	6.88	17.24	48.39	8.06	1.18	64.45
3 to 10	75.98	6.01	15.27	54.70	9.01	3.00	66.97
10 to 30	67.64	5.26	6.58	55.80	7.79	2.53	59.85
30 to 100	62.21	4.85	6.08	51.28	6.16	1.31	56.05
100 to 300	56.53	3.44	2.57	50.52	5.25	1.81	51.28

300 to 1,000	56.93	2.69	3.07	51.17	3.89	1.20	53.04
1,000 to 3,000							
3,000 to 10,000							
10,000 and over							
Total	59.04	3.54	4.03	51.47	5.04	1.50	54.00
Hot rolled sheets:							
Under 3	67.99	7.18	18.27	42.54	9.95	2.77	58.04
3 to 10	58.91	5.58	10.65	42.68	9.47	3.89	49.44
10 to 30	59.69	5.70	10.86	43.13	9.14	3.44	50.55
30 to 100	52.46	4.33	9.78	38.35	7.04	2.71	45.42
100 to 300	56.22	3.39	12.63	40.20	6.38	2.99	49.84
300 to 1,000	53.34	2.66	11.30	39.38	4.88	2.22	48.46
1,000 to 3,000	53.25	3.26	11.40	38.59	4.46	1.20	48.79
3,000 to 10,000	47.28	1.33	6.57	39.38	3.04	1.71	44.24
10,000 and over	46.22	.53	5.61	40.08	.80	.27	45.42
Total	51.68	2.47	9.70	39.51	4.16	1.69	47.52
Cold rolled sheets:							
Under 3	83.15	10.05	10.31	62.79	14.31	4.26	68.84
3 to 10	74.73	5.26	6.62	62.85	9.39	4.13	65.34
10 to 30	70.13	4.58	3.31	62.24	7.66	3.08	62.47
30 to 100	66.68	3.15	1.23	62.30	6.25	3.10	60.43
100 to 300	64.80	4.00	1.69	59.11	5.98	1.98	58.82
300 to 1,000	62.34	2.30	.61	59.43	4.53	2.23	57.81
1,000 to 3,000	62.32	1.96	.90	59.46	4.46	2.50	57.86
3,000 to 10,000	62.20	1.78	.28	60.14	5.24	3.46	56.96
10,000 and over	60.29	0	−.93	61.22	.55	.55	59.47
Total	62.42	1.91	.45	60.06	4.50	2.59	57.92
Hot rolled strip:							
Under 3	69.80	8.23	19.09	42.48	11.36	3.13	58.44
3 to 10	66.89	7.09	16.20	43.60	9.72	2.63	57.17
10 to 30	62.73	6.31	15.14	41.28	8.13	1.82	54.60
30 to 100	60.73	5.58	14.32	40.83	7.10	1.52	53.63
100 to 300	54.77	3.67	11.17	39.93	5.57	1.90	49.20
300 to 1,000	49.62	3.36	6.96	39.30	4.34	.98	45.28
1,000 to 3,000	46.33	2.39	4.59	39.35	3.19	.80	43.14
3,000 to 10,000	43.03	.87	1.67	40.49	2.64	1.77	40.39
10,000 and over							
Total	48.53	2.65	6.00	39.88	3.97	1.32	44.56
Cold rolled strip:							
Under 3	132.53	10.04	61.39	61.10	13.04	3.00	119.49
3 to 10	149.87	9.02	64.68	76.17	11.54	2.52	138.33
10 to 30	115.47	6.47	48.54	60.46	8.79	2.32	106.68
30 to 100	99.85	5.22	33.22	61.41	7.05	1.83	92.80
100 to 300	97.60	4.69	33.45	59.46	6.38	1.69	91.22

TABLE 2.—*Steel shipments by size of shipment—all reported items by products—average prices per ton—United States, February 1939*—Con.

Size of shipments (tonnage classes)	Delivered value	Freight charged	Net extras	Base price	Freight paid	Freight absorbed	Mill net
Cold rolled strip—Continued.							
300 to 1,000	$87.00	$3.84	$23.15	$60.01	$4.96	$1.12	$82.04
1,000 to 3,000	79.42	.63	11.15	67.64	.83	.20	78.59
3,000 to 10,000							
10,000 and over							
Total	93.64	4.08	27.79	61.77	5.42	1.34	88.22
Sheet and tin plate bars:[1]							
Under 3							
3 to 10							
10 to 30							
30 to 100							
100 to 300	31.59	.55	0	31.04	1.85	1.30	29.74
300 to 1,000	29.62	1.39	.11	28.12	1.44	.05	28.18
1,000 to 3,000	30.41	.90	.04	29.47	1.23	.33	29.18
3,000 to 10,000							
10,000 and over							
Total	30.36	.93	.05	29.38	1.25	.32	29.11
Tin plate:[2]							
Under 3	93.25	6.50	3.50	83.25	6.75	.25	86.50
3 to 10	103.70	4.81	−2.19	101.08	5.24	.43	98.46
10 to 30	102.34	6.90	−2.46	97.90	8.61	1.71	93.73
30 to 100	101.14	6.63	−1.67	96.18	8.59	1.96	92.55
100 to 300	106.02	7.72	−3.34	101.64	9.29	1.57	96.73
300 to 1,000	105.00	5.83	−2.87	102.04	5.95	.12	99.05
1,000 to 3,000	100.08	5.14	−2.47	97.41	4.53	−.61	95.55
3,000 to 10,000	100.98	5.98	−6.21	101.21	2.17	−3.81	98.81
10,000 and over							
Total	102.46	6.17	−4.02	100.31	5.11	−1.06	97.35

[1] Wire rods and sheet and tin plate bars in gross tons; all others in net tons.
[2] Sample product is 95 pounds tin plate; 100 pounds base box is standard; negative extras in part caused by this difference.

TABLE 3.—*Steel shipments by size of shipments—normal base point shipments by products—aggregate tonnage and sales—United States, February 1939*

Size of shipments (tonnage classes)	Item count	Tonnage (aggregate)	Delivered value	Freight charged	Net extras	Base price	Freight paid	Freight absorbed	Mill net
Plates:									
Under 3	34	51	$3,312	$435	$735	$2,142	$550	$115	$2,762
3 to 10	86	436	24,194	3,013	2,158	19,023	4,260	1,247	19,934
10 to 30	92	1,812	97,397	11,990	6,984	78,423	16,881	4,891	80,516
30 to 100	122	6,680	343,875	35,213	26,710	281,952	49,503	14,290	294,372
100 to 300	92	16,079	827,200	71,836	79,239	676,125	112,559	40,723	714,641
300 to 1,000	54	27,829	1,355,916	99,714	121,689	1,134,513	143,394	43,680	1,212,522
1,000 to 3,000	15	22,271	1,040,843	51,311	74,094	915,438	68,580	17,269	972,263
3,000 to 10,000	3	10,739	491,713	12,547	38,860	440,306	15,078	2,531	476,635
10,000 and over									
Total	498	85,897	4,184,450	286,059	350,469	3,547,922	410,805	124,746	3,773,645
Heavy structural shapes:									
Under 3	19	28	1,769	320	256	1,193	372	52	1,397
3 to 10	52	300	15,873	3,017	542	12,314	3,913	896	11,960
10 to 30	66	1,200	60,805	9,968	1,493	49,344	13,082	3,114	47,723
30 to 100	83	4,775	247,541	42,374	8,474	196,693	50,279	7,905	197,262
100 to 300	61	10,867	541,589	87,458	16,267	437,864	97,737	10,279	443,852
300 to 1,000	49	24,239	1,149,662	130,538	43,087	976,037	158,342	27,804	991,320
1,000 to 3,000	12	18,341	815,566	42,717	35,839	737,010	59,075	16,358	756,491
3,000 to 10,000	3	13,922	619,351	30,698	28,773	559,880	33,567	2,869	585,784
10,000 and over									
Total	345	73,672	3,452,156	347,090	134,731	2,970,335	416,367	69,277	3,035,789
Wire rods: [1]									
Under 3									
3 to 10	1	8	497	59	104	334	32	−27	465
10 to 30	11	247	12,517	1,294	729	10,494	1,611	317	10,906
30 to 100	16	879	45,187	3,043	4,999	37,145	4,997	1,954	40,190
100 to 300	11	1,893	88,735	3,741	5,488	79,506	6,180	2,439	82,555
300 to 1,000	18	8,738	410,471	27,290	31,499	351,682	33,228	5,938	377,243
1,000 to 3,000	4	8,953	362,415	11,952	14,020	336,443	22,477	10,525	339,938
3,000 to 10,000									
10,000 and over									
Total	61	20,718	919,822	47,379	56,839	815,604	68,525	21,146	851,297
Plain drawn wire:									
Under 3	30	39	2,854	292	685	1,877	320	28	2,534
3 to 10	37	176	13,179	1,089	2,604	9,486	1,619	530	11,560
10 to 30	57	1,049	70,575	6,418	7,084	57,073	7,531	1,113	63,044

TABLE 3.—*Steel shipments by size of shipments—normal base point shipments by products—aggregate tonnage and sales—United States, February 1939*—Continued

Size of shipments (tonnage classes)	Item count	Tonnage (aggregate)	Delivered value	Freight charged	Net extras	Base price	Freight paid	Freight absorbed	Mill net
Plain drawn wire—Continued.									
30 to 100	47	2,818	$174,020	$13,900	$17,142	$142,978	$17,057	$3,157	$156,963
100 to 300	21	3,548	199,280	11,936	8,778	178,566	19,147	7,211	180,133
300 to 1,000	11	6,465	360,645	16,036	18,681	325,928	25,195	9,159	335,450
1,000 to 3,000									
3,000 to 10,000									
10,000 and over									
Total	203	14,095	820,553	49,671	54,974	715,908	70,869	21,198	749,684
Hot rolled sheets:									
Under 3	50	72	4,912	500	1,335	3,077	675	175	4,237
3 to 10	83	458	26,816	2,728	4,953	19,135	4,002	1,274	22,814
10 to 30	121	2,212	129,556	13,448	22,669	93,439	19,172	5,724	110,384
30 to 100	130	7,220	412,168	33,008	80,585	298,575	50,661	17,653	361,507
100 to 300	103	17,946	1,001,689	64,547	222,766	714,376	108,119	43,572	893,570
300 to 1,000	76	39,479	2,091,700	112,120	440,674	1,538,906	194,965	82,845	1,896,735
1,000 to 3,000	27	44,355	2,351,735	169,631	496,667	1,685,437	199,683	30,052	2,152,052
3,000 to 10,000	6	25,690	1,204,021	38,782	176,651	988,588	66,404	27,622	1,137,617
10,000 and over	1	10,978	509,116	15,059	80,488	413,569	16,074	1,015	493,042
Total	597	148,410	7,731,713	449,823	1,526,788	5,755,102	659,755	209,932	7,071,958
Cold rolled sheets:									
Under 3	12	15	1,205	122	167	916	178	56	1,027
3 to 10	42	236	17,452	1,331	1,490	14,631	1,841	510	15,611
10 to 30	46	848	59,056	3,781	2,769	52,506	6,213	2,432	52,843
30 to 100	40	2,165	143,035	7,340	2,602	133,093	12,560	5,220	130,475
100 to 300	24	4,221	275,588	18,637	8,527	248,424	24,795	6,158	250,793
300 to 1,000	30	17,169	1,071,346	39,265	11,363	1,020,718	75,769	36,504	995,577
1,000 to 3,000	5	8,588	540,231	21,749	8,423	510,059	35,102	13,353	505,129
3,000 to 10,000	4	17,524	1,070,623	48,585	8,669	1,013,369	102,806	54,221	967,817
10,000 and over									
Total	203	50,766	3,178,536	140,810	44,010	2,993,716	259,264	118,454	2,919,272
Hot rolled strip:									
Under 3	52	73	5,111	609	1,405	3,097	836	227	4,275
3 to 10	70	351	23,459	2,617	5,804	15,038	3,199	582	20,260
10 to 30	70	1,322	84,078	8,688	20,268	55,122	10,964	2,276	73,114
30 to 100	73	4,248	257,595	24,041	60,739	172,815	29,883	5,842	227,712
100 to 300	44	7,320	402,219	28,341	82,630	291,248	40,718	12,377	361,501

300 to 1,000	28	13,882	690,075	49,916	99,105	541,054	61,639	11,723	628,436
1,000 to 3,000	12	18,686	870,504	45,226	88,911	736,367	56,414	11,188	814,090
3,000 to 10,000	2	7,057	285,184	15,907	7,362	261,915	23,815	7,908	261,369
10,000 and over									
Total	351	52,939	2,618,225	175,345	366,224	2,076,656	227,468	52,123	2,390,757
Cold rolled strip:									
Under 3	34	43	6,394	386	3,148	2,860	433	47	5,961
3 to 10	54	275	42,541	2,230	19,859	20,452	2,553	323	39,988
10 to 30	33	604	67,891	3,856	27,648	36,387	4,567	711	63,324
30 to 100	49	2,697	267,382	15,430	88,016	163,936	17,452	2,022	249,930
100 to 300	14	2,225	219,239	12,805	76,241	130,193	14,021	1,216	205,218
300 to 1,000	7	3,457	263,399	19,008	38,523	205,868	18,371	−637	245,028
1,000 to 3,000									
3,000 to 10,000									
10,000 and over									
Total	191	9,301	866,846	53,715	253,435	559,696	57,397	3,682	809,449
Sheet and tin plate bars: [1]									
Under 3									
3 to 10									
10 to 30									
30 to 100									
100 to 300	1	110	3,475	61		3,414	204	143	3,271
300 to 1,000	1	716	21,214	996	81	20,137	1,033	37	20,181
1,000 to 3,000	4	7,372	224,186	6,600	315	217,271	9,029	2,429	215,157
3,000 to 10,000									
10,000 and over									
Total	6	8,198	248,875	7,657	396	240,822	10,266	2,609	238,609
Tin plate: [2]									
Under 3	3	4	373	26	14	333	27	1	346
3 to 10	10	55	5,685	276	−124	5,533	301	25	5,384
10 to 30	12	217	22,203	1,595	−540	21,148	1,870	275	20,333
30 to 100	33	2,036	206,834	13,702	−4,428	197,560	17,615	3,913	189,219
100 to 300	27	4,948	526,526	39,775	−16,341	503,092	44,491	4,716	482,035
300 to 1,000	10	4,982	523,145	29,058	−14,285	508,372	29,677	619	493,468
1,000 to 3,000	3	5,601	560,594	28,794	−13,820	545,620	25,372	−3,422	535,222
3,000 to 10,000	2	10,709	1,081,430	64,052	−66,499	1,083,877	23,265	−40,787	1,058,165
10,000 and over									
Total	100	28,552	2,926,790	177,278	−116,023	2,865,535	142,618	−34,660	2,784,172
Total of products	2,555	492,548	26,947,966	1,734,827	2,671,843	22,541,296	2,323,334	588,507	24,624,632

[1] Wire rods and sheet and tin plate bars in gross tons; all others in net tons.
[2] Sample product is 95 pound tin plate; 100 pound base box is standard; negative extras in part caused by this difference.

TABLE 4.—*Steel shipments by size of shipment—normal base point shipments by products—average price per ton—United States, February 1939*

Size of shipments (tonnage classes)	Delivered value	Freight charged	Net extras	Base price	Freight paid	Freight absorbed	Mill net
Plates:							
Under 3	$64.94	$8.53	$14.41	$42.00	$10.78	$2.25	$54.16
3 to 10	55.49	6.91	4.95	43.63	9.77	2.86	45.72
10 to 30	53.75	6.62	3.85	43.28	9.32	2.70	44.43
30 to 100	51.48	5.27	4.00	42.21	7.41	2.14	44.07
100 to 300	51.45	4.47	4.93	42.05	7.00	2.53	44.45
300 to 1,000	48.72	3.58	4.37	40.77	5.15	1.57	43.57
1,000 to 3,000	46.74	2.30	3.33	41.11	3.08	.78	43.66
3,000 to 10,000	45.79	1.17	3.62	41.00	1.41	.24	44.38
10,000 and over							
Total	48.71	3.33	4.08	41.30	4.78	1.45	43.93
Heavy structural shapes:							
Under 3	63.18	11.43	9.14	42.61	13.29	1.86	49.89
3 to 10	52.91	10.06	1.81	41.04	13.04	2.98	39.87
10 to 30	50.67	8.31	1.25	41.11	10.90	2.59	39.77
30 to 100	51.84	8.87	1.78	41.19	10.53	1.66	41.31
100 to 300	49.84	8.05	1.50	40.29	8.99	.94	40.85
300 to 1,000	47.43	5.38	1.78	40.27	6.53	1.15	40.90
1,000 to 3,000	44.46	2.33	1.95	40.18	3.22	.89	41.24
3,000 to 10,000	44.49	2.20	2.07	40.22	2.41	.21	42.08
10,000 and over							
Total	46.86	4.71	1.83	40.32	5.65	.94	41.21
Wire rods:[1]							
Under 3							
3 to 10	62.13	7.38	13.00	41.75	4.00	−3.38	58.13
10 to 30	50.67	5.24	2.95	42.48	6.52	1.28	44.15
30 to 100	51.41	3.46	5.69	42.26	5.68	2.22	45.73
100 to 300	46.88	1.98	2.90	42.00	3.27	1.29	43.61
300 to 1,000	46.98	3.12	3.61	40.25	3.80	.68	43.18
1,000 to 3,000	40.48	1.33	1.57	37.58	2.51	1.18	37.97
3,000 to 10,000							
100,000 and over							
Total	44.40	2.29	2.74	39.37	3.31	1.02	41.09
Plain drawn wire:							
Under 3	73.18	7.49	17.56	48.13	8.21	.72	64.97
3 to 10	74.88	6.19	14.80	53.89	9.20	3.01	65.68
10 to 30	67.28	6.12	6.75	54.41	7.18	1.06	60.10

30 to 100	61.75	4.93	6.08	50.74	6.05	1.12	55.70
100 to 300	56.17	3.37	2.47	50.33	5.40	2.03	50.77
300 to 1,000	55.79	2.48	2.89	50.42	3.90	1.42	51.89
1,000 to 3,000							
3,000 to 10,000							
10,000 and over							
Total	58.22	3.53	3.90	50.79	5.03	1.50	53.19
Hot rolled sheets:							
Under 3	68.22	6.94	18.54	42.74	9.37	2.43	58.85
3 to 10	58.55	5.96	10.81	41.78	8.74	2.78	49.81
10 to 30	58.57	6.08	10.25	42.24	8.67	2.59	49.90
30 to 100	57.09	4.57	11.16	41.36	7.02	2.45	50.07
100 to 300	55.82	3.60	12.41	39.81	6.03	2.43	49.79
300 to 1,000	52.98	2.84	11.16	38.98	4.94	2.10	48.04
1,000 to 3,000	53.02	3.82	11.20	38.00	4.50	.68	48.52
3,000 to 10,000	46.87	1.51	6.88	38.48	2.58	1.07	44.29
10,000 and over	46.37	1.37	7.33	37.67	1.46	.09	44.91
Total	52.10	3.03	10.29	38.78	4.45	1.42	47.65
Cold rolled sheets:							
Under 3	80.33	8.13	11.13	61.07	11.87	3.74	68.46
3 to 10	73.95	5.64	6.31	62.00	7.80	2.16	66.15
10 to 30	69.64	4.46	3.26	61.92	7.33	2.87	62.31
30 to 100	66.07	3.39	1.20	61.48	5.80	2.41	60.27
100 to 300	65.29	4.42	2.02	58.85	5.87	1.45	59.42
300 to 1,000	62.40	2.29	.66	59.45	4.41	2.12	57.99
1,000 to 3,000	62.90	2.53	.98	59.39	4.09	1.56	58.81
3,000 to 10,000	61.09	2.77	.49	57.83	5.87	3.10	55.22
10,000 and over							
Total	62.61	2.77	.87	58.97	5.10	2.33	57.51
Hot rolled strip:							
Under 3	70.01	8.34	19.25	42.42	11.45	3.11	58.56
3 to 10	66.84	7.45	16.54	42.85	9.11	1.66	57.73
10 to 30	63.60	6.57	15.33	41.70	8.29	1.72	55.31
30 to 100	60.64	5.66	14.30	40.68	7.03	1.37	53.61
100 to 300	54.95	3.87	11.29	39.79	5.56	1.69	49.39
300 to 1,000	49.71	3.60	7.14	38.97	4.44	.84	45.27
1,000 to 3,000	46.59	2.42	4.76	39.41	3.02	.60	43.57
3,000 to 10,000	40.41	2.25	1.04	37.12	3.37	1.12	37.04
10,000 and over							
Total	49.46	3.31	6.92	39.23	4.30	.99	45.16

See footnote at end of table.

TABLE 4.—*Steel shipments by size of shipment—normal base point shipments by products—average price per ton—United States, February 1939*—Continued

Size of shipments (tonnage classes)	Delivered value	Freight charged	Net extras	Base price	Freight paid	Freight absorbed	Mill net
Cold rolled strip:							
Under 3	$148.70	$8.98	$73.21	$66.51	$10.07	$1.09	$138.63
3 to 10	154.69	8.11	72.21	74.37	9.28	1.17	145.41
10 to 30	112.40	6.38	45.77	60.25	7.56	1.18	104.84
30 to 100	99.14	5.72	32.64	60.78	6.47	.75	92.67
100 to 300	98.53	5.75	34.27	58.51	6.30	.55	92.23
300 to 1,000	76.19	5.50	11.14	59.55	5.31	−.19	70.88
1,000 to 3,000							
3,000 to 10,000							
10,000 and over							
Total	93.20	5.77	27.25	60.18	6.17	.40	87.03
Sheet and tin plate bars: [1]							
Under 3							
3 to 10							
10 to 30							
30 to 100							
100 to 300	31.59	.55	0	31.04	1.85	1.30	29.74
300 to 1,000	29.63	1.39	.11	28.13	1.44	.05	28.19
1,000 to 3,000	30.41	.90	.04	29.47	1.23	.33	29.18
3,000 to 10,000							
10,000 and over							
Total	30.36	.93	.05	29.38	1.25	.32	29.11
Tin plate: [2]							
Under 3	93.25	6.50	3.50	83.25	6.75	.25	86.50
3 to 10	103.36	5.02	−2.26	100.60	5.47	.45	97.89
10 to 30	102.32	7.35	−2.49	97.46	8.62	1.27	93.70
30 to 100	101.59	6.73	−2.17	97.03	8.65	1.92	92.94
100 to 300	106.41	8.04	−3.30	101.67	8.99	.95	97.42
300 to 1,000	105.01	5.84	−2.87	102.04	5.96	.12	99.05
1,000 to 3,000	100.09	5.14	−2.46	97.41	4.53	−.61	95.56
3,000 to 10,000	100.98	5.98	−6.21	101.21	2.17	−3.81	98.81
10,000 and over							
Total	102.43	6.20	−4.06	100.29	4.99	−1.21	97.44

[1] Wire rods and sheet and tin plate bars in gross tons; all others in net tons.
[2] Sample product is 95 pound tin plate; 100 pound base box is standard; negative extras in part caused by this difference.

TABLE 5.—*Published base prices of selected steel products, February 1939*

[Dollars per ton]

Base points	Plates	Heavy structural shapes	Wire rods	Plain drawn wire	Hot rolled sheets	Cold rolled sheets	Hot rolled strip	Cold rolled strip	Sheet and tin plate bars	Tin plate
Normal points:										
Bethlehem, Pa		42								
Birmingham, Ala	42	42	43	52	43		43			
Buffalo, N. Y		42			43	64			34	
Canton, Ohio									34	
Chicago, Ill	42	42	43	52	43	64	43		34	100
Claymont, Del	42									
Cleveland, Ohio	42		43	52	43	64	43	59	34	
Coatsville, Pa	42									
Gary, Ind	42	42			43	64	43			100
Middletown, Ohio					43	64	43			
Pittsburgh, Pa	42	42	43	52	43	64	43	59	34	100
Sparrows Point, Md	42				43				34	
Youngstown, Ohio	42				43	64	43	59	34	
Abnormal points:										
Chicago, Ill								61		
Detroit, Mich					45	66	45	61		
Granite City, Ill					45	66				102
Gulf ports	49	49								
Pacific ports	52	54			53	76				
San Francisco, Calif			52							
Worcester, Mass			45					63		

NOTE.—Wire rods and sheet and tin plate bars in gross tons; all others in net tons; tin plate is 100-pound quality.

Source: The Iron Age, Feb. 2, 9, 16, 23, 1939.

TABLE 6.—*Effect of variations in capacity utilization upon man-hours required*

Industry and percent of capacity utilized:	*Man-hours required per unit of output*
Iron and steel:	
55 to 60	100. 0
50 to 55	105. 0
45 to 50	111. 0
40 to 45	118. 0
35 to 40	123. 0
30 to 35	127. 0
25 to 30	131. 0
20 to 25	135. 0
Cement:	
100	100. 0
80	108. 6
60	120. 8
40	140. 4
20	181. 4
Brick and tile:	
70 and over	100. 0
60 to 69.99	
50 to 59.99	101. 5
40 to 49.99	109. 2
30 to 39.99	115. 4
20 to 29.99	130. 9
Less than 20	145. 5

Sources:

Iron and steel.—Bureau of Labor Statistics, Monthly Labor Review, vol. 40, May 1935, p. 1161.

Cement.—National Research Project, Mechanization in the Cement Industry, 1949, p. 23.

Brick and tile.—National Research Project, Productivity and Employment in Selected Industries, Brick and Tile, 1939, p. 117.

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